Chiral Lagrangians with decuplet baryons to one loop

Shao-Zhou Jiang,^{1,2,*} Yan-Rui Liu,^{3,†} Hong-Qian Wang,¹ and Qin-He Yang¹

¹Department of Physics and GXU-NAOC Center for Astrophysics and Space Sciences, Guangxi University,

Nanning, Guangxi 530004, People's Republic of China

²Guangxi Key Laboratory for the Relativistic Astrophysics,

Nanning, Guangxi 530004, People's Republic of China

³School of Physics and Key Laboratory of Particle Physics and Particle Irradiation (MOE),

Shandong University, Jinan 250100, People's Republic of China

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We construct the relativistic chiral Lagrangians with decuplet baryons up to the order $\mathcal{O}(p^4)$ (one loop). For the meson-decuplet-decuplet couplings, there are 1, 13, 55, and 548 terms in the $\mathcal{O}(p^1) - \mathcal{O}(p^4)$ order Lagrangians, respectively. For the meson-octet-decuplet Lagrangians, the number of independent terms from $\mathcal{O}(p^1)$ to $\mathcal{O}(p^4)$ is 1, 5, 67, and 611, respectively. For convenience of application, the $\pi\Delta\Delta$ and $\piN\Delta$ chiral Lagrangians are picked out. This new form of Δ Lagrangians is equivalent to the original isovector-isospinor one, and we establish relations between these two forms.

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I. INTRODUCTION

Chiral perturbation theory (ChPT) is a useful tool to describe low-energy strong interactions of mesons [1-3] and baryons [4]. This effective theory is based on the chiral symmetry of OCD and its spontaneous breaking. The interaction terms and various physical quantities in this theory are organized perturbatively by chiral dimension, the order of p/Λ_{γ} where p represents the typical scale of momentum and Λ_{ν} is the scale of chiral symmetry breaking. Theoretically, the higher the chiral dimension terms, the more precise the obtained results. At present, the chiral Lagrangians containing the pseudoscalar mesons [2,3,5-12]and the ground state baryons [4,13-20] [both SU(2) and SU(3)] have been already constructed to the sixth and fourth order, respectively. Recently, the chiral Lagrangians with $\Delta(1232)$ were also considered up to the fourth chiral order [21,22]. For the purpose of application, the current existent chiral Lagrangians are precise enough for theoretical studies on low-energy interactions. However, the above investigations missed a kind of particles, the spin-3/2 hyperons.

In reality, a lot of low-energy QCD problems are related to the chiral Lagrangians with decuplet states which are degenerate with the octet baryons in the large N_c limit. Such problems include: the masses of the octet/decuplet

*jsz@gxu.edu.cn [†]yrliu@sdu.edu.cn baryons and the mass relations between octet/decuplet baryons [23–26], the electromagnetic structures of octet and decuplet baryons (magnetic moments, electric quadrupole moments, and electromagnetic form factors) [27–30], the meson-octet/decuplet scattering processes [31,32], the transitions from decuplet states to octet states [33,34], lattice studies of baryon properties [35-37], and so on. Especially, the studies of the transitions between decuplet and octet baryons can shed light on the possible dibaryons [38]. The lowest-order chiral Lagrangian with decuplet states is obtained easily [39], but we find only fragmentary results for high-order terms in the literature (see the references mentioned above). Such Lagrangians are constructed in order to focus on special problems. A complete and minimal set of Lagrangians with decuplet baryons is still needed. One purpose in this paper is to construct the chiral Lagrangians with the decuplet baryons to one loop (the fourth chiral order) systematically.

In the SU(2) case, we have obtained the chiral Lagrangians with Δ up to the order $\mathcal{O}(p^4)$ [22], where we use the isovector-isospinor representation [40] in the isospin space for the Rarita-Schwinger (RS) fields. The application of such Lagrangians is not so convenient in some cases. On the other hand, in the SU(3) case, the decuplet baryons are represented in the flavor space as a totally symmetric tensor T_{abc} . Since the Δ baryons are members of the decuplet representation, the Lagrangians with Δ can also be expressed with the symmetric tensor. However, it is apparently not straightforward to make a relation between these two formalisms. Another purpose of the present study is to give new chiral Lagrangians with Δ in the form of T_{abc} (*a*, *b*, *c* = 1, 2) and establish the relations to the former formalism.

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This paper is organized as follows. In Sec. II, we review the building blocks for the construction of the chiral Lagrangians with the mesons, the external sources, and a part of the building blocks with baryon fields. In Sec. III, we present the structures of the chiral Lagrangians and give full building blocks with baryon fields. In Sec. IV, the properties of the building blocks, the linear relations of invariant monomials, and the relations between the original chiral Lagrangians with Δ and the new forms are given. In Sec. V, we list our results and present some discussions. Section VI is a short summary.

II. BUILDING BLOCKS IN CONSTRUCTING CHIRAL LAGRANGIANS

Generally speaking, the constructed Lagrangians in ChPT involve the pseudoscalar mesons, the external sources, the decuplet baryons, and the octet baryons. In this section, we present appropriate building blocks in constructing the chiral Lagrangians. More detailed discussions about them can be found in Refs. [2–6,9,10,12,17,18,20–22]. For the spin-3/2 baryon states, we consider both SU(3) and SU(2)cases. For convenience, we simply call the form of chiral Lagrangians with Δ in Ref. [22] "original" and those in this paper "new." Needless to say, the new form SU(2)Lagrangians are just selected terms of the SU(3)Lagrangians with decuplet baryons. Hence, in the following parts, we treat them in the same way.

A. Building blocks of the mesons and the external sources

The QCD Lagrangian \mathcal{L} can be written as

$$\mathcal{L} = \mathcal{L}_{\text{QCD}}^0 + \bar{q}(\not p + \not q \gamma_5 - s + i p \gamma_5)q, \qquad (1)$$

where \mathcal{L}_{QCD}^{0} is the original QCD Lagrangian and q denotes the quark field. We use s, p, v^{μ} , and a^{μ} to denote scalar, pseudoscalar, vector, and axial-vector external sources, respectively. Conventionally, the tensor source and the θ term are ignored. As usual, we consider that only a^{μ} is traceless in the two-flavor case, but both a^{μ} and v^{μ} are traceless in the three-flavor case.

In ChPT, the pseudoscalar mesons (Goldstone bosons) come from the spontaneous breaking of the global symmetry $SU(N_f)_L \times SU(N_f)_R$ into $SU(N_f)_V$. The resulting meson fields are collected in u, and it transforms as

$$u \to g_L u h^{\dagger} = h u g_R^{\dagger} \tag{2}$$

under the chiral rotation, where g_L and g_R represent elements in $SU(N_f)_L$ and $SU(N_f)_R$, respectively, and *h* is a compensator field which is a function of the pion fields.

To construct the chirally invariant Lagrangians involving only meson fields and external sources, the building blocks are usually chosen as

$$u^{\mu} = i \{ u^{\dagger} (\partial^{\mu} - ir^{\mu}) u - u (\partial^{\mu} - il^{\mu}) u^{\dagger} \}, \chi_{\pm} = u^{\dagger} \chi u^{\dagger} \pm u \chi^{\dagger} u, h^{\mu\nu} = \nabla^{\mu} u^{\nu} + \nabla^{\nu} u^{\mu}, f^{\mu\nu}_{+} = u F_{L}^{\mu\nu} u^{\dagger} + u^{\dagger} F_{R}^{\mu\nu} u, f^{\mu\nu}_{-} = u F_{L}^{\mu\nu} u^{\dagger} - u^{\dagger} F_{R}^{\mu\nu} u = -\nabla^{\mu} u^{\nu} + \nabla^{\nu} u^{\mu},$$
(3)

where $r^{\mu} = v^{\mu} + a^{\mu}$, $l^{\mu} = v^{\mu} - a^{\mu}$, $\chi = 2B_0(s + ip)$, $F_R^{\mu\nu} = \partial^{\mu}r^{\nu} - \partial^{\nu}r^{\mu} - i[r^{\mu}, r^{\nu}]$, $F_L^{\mu\nu} = \partial^{\mu}l^{\nu} - \partial^{\nu}l^{\mu} - i[l^{\mu}, l^{\nu}]$, and B_0 is a constant related to the quark condensate. The form of these building blocks, however, is not very useful in the construction of chiral Lagrangians with decuplet baryons. For convenience, we write the flavor indices of these building blocks (or any other matrices in the flavor space) explicitly,

$$X = X_a^{\ b} + X_s I, \qquad X_s = \frac{1}{N_f} \langle X \rangle, \tag{4}$$

where X denotes any building block in Eq. (3) (or any matrix in the flavor space), $X_a{}^b{}(X_s)$ is the traceless (traceable) part of X, I is the $N_f \times N_f$ identity matrix in the N_f -flavor space, and $\langle \cdots \rangle$ means the trace in the flavor space. We use a and b (a, b = 1, 2, 3) to denote the row index and column index of the matrix X, respectively. In the following, we will treat the row index (or the first index) of $X_a{}^b$ as the subscript and the column index (or the second index) as the superscript. According to these notations, we have $u_s^{\mu} = f_{-,s}^{\mu\nu} = h_s^{\mu\nu} = 0$ in the two-flavor case and an additional relation $f_{+,s}^{\mu\nu} = 0$ in the three-flavor case. The chiral transformations (R) for these building blocks are

$$\begin{aligned} X_a{}^b &\xrightarrow{R} X'_a{}^b = h_a{}^{a'} X'_{a'}{}^{b'} h^{\dagger}{}_{b'}{}^b, \\ X_s &\xrightarrow{R} X'_s = X_s. \end{aligned} \tag{5}$$

Here $h_a{}^{a'}$ does not need to be traceless as the definition of $X_a{}^b$ in Eq. (4). The row index of $X_a{}^b$ is related to the *h* field, but the column index is related to the h^{\dagger} field.

The covariant derivative ∇^{μ} acting on the building blocks in Eq. (5) is

$$\begin{aligned} \nabla^{\mu}X_{a}{}^{b} &= \partial^{\mu}X_{a}{}^{b} + \Gamma_{a}{}^{c,\mu}X_{c}{}^{b} - X_{a}{}^{c}\Gamma_{c}{}^{b,\mu}, \\ \nabla^{\mu}X_{s} &= \partial^{\mu}X_{s}, \\ \Gamma^{\mu} &= \frac{1}{2}\{u^{\dagger}(\partial^{\mu} - ir^{\mu})u + u(\partial^{\mu} - il^{\mu})u^{\dagger}\}. \end{aligned}$$
(6)

In constructing the Lagrangian, the following two relations will be useful:

$$[\nabla^{\mu}, \nabla^{\nu}]X_a{}^b = \Gamma_a{}^{c,\mu\nu}X_c{}^b - X_a{}^c\Gamma_c{}^{b,\mu\nu}, \tag{7}$$

$$\nabla^{\mu}, \nabla^{\nu}]X_s = 0, \tag{8}$$

$$\Gamma^{\mu\nu} = \nabla^{\mu}\Gamma^{\nu} - \nabla^{\nu}\Gamma^{\mu} - [\Gamma^{\mu}, \Gamma^{\nu}] = \frac{1}{4}[u^{\mu}, u^{\nu}] - \frac{i}{2}f_{+}^{\mu\nu}.$$
 (9)

B. Building blocks of baryons

Besides the meson fields and external fields, we also need baryons belonging to SU(3) eight and ten representations. The octet baryons are represented by a matrix $B_a{}^b$,

$$B_{a}{}^{b} = \begin{pmatrix} \frac{2^{o}}{\sqrt{2}} + \frac{\Lambda}{\sqrt{6}} & \Sigma^{+} & p \\ \Sigma^{-} & -\frac{\Sigma^{0}}{\sqrt{2}} + \frac{\Lambda}{\sqrt{6}} & n \\ \Xi^{-} & \Xi^{0} & -\frac{2\Lambda}{\sqrt{6}} \end{pmatrix}.$$
 (10)

In the two-flavor case, it is reduced to the nucleon doublet,

$$\psi_a = \binom{p}{n}.\tag{11}$$

One may also use the symbol $B_a{}^3$ (a = 1, 2) to denote this nucleon doublet. For the decuplet baryons, they are denoted by a totally symmetrical tensor T_{abc} with

$$T_{111} = \Delta^{++}, \quad T_{112} = \frac{\Delta^{+}}{\sqrt{3}}, \quad T_{122} = \frac{\Delta^{0}}{\sqrt{3}}, \quad T_{222} = \Delta^{-},$$

$$T_{113} = \frac{\Sigma^{*+}}{\sqrt{3}}, \quad T_{123} = \frac{\Sigma^{*0}}{\sqrt{6}}, \quad T_{223} = \frac{\Sigma^{*-}}{\sqrt{3}},$$

$$T_{133} = \frac{\Xi^{*0}}{\sqrt{3}}, \quad T_{233} = \frac{\Xi^{*-}}{\sqrt{3}}, \quad T_{333} = \Omega^{-}.$$

In the SU(2) case, only the first four fields are needed. The chiral transformations for these baryon fields are

$$B_{a}{}^{b} \stackrel{R}{\longrightarrow} B'_{a}{}^{b} = h_{a}{}^{a'}B_{a'}{}^{b'}h^{\dagger}{}_{b'}{}^{b},$$

$$\psi_{a} \stackrel{R}{\longrightarrow} \psi'_{a} = h_{a}{}^{b}\psi_{b},$$

$$T_{abc} \stackrel{R}{\longrightarrow} T'_{abc} = h_{a}{}^{a'}h_{b}{}^{b'}h_{c}{}^{c'}T_{a'b'c'},$$

$$\bar{B}_{a}{}^{b} \stackrel{R}{\longrightarrow} \bar{B}'_{a}{}^{b} = h_{a}{}^{a'}\bar{B}_{a'}{}^{b'}h^{\dagger}_{b'}{}^{b},$$

$$\bar{\psi}^{a} \stackrel{R}{\longrightarrow} \psi'^{a} = \bar{\psi}{}^{b}h^{\dagger}{}_{b}{}^{a},$$

$$\bar{T}^{abc} \stackrel{R}{\longrightarrow} \bar{T}'^{abc} = \bar{T}^{a'b'c'}h^{\dagger}{}_{a'}{}^{a}h^{\dagger}{}_{b'}{}^{b}h^{\dagger}{}_{c'}{}^{c}.$$
(12)

From the transformations, the indices of ψ_a and T_{abc} ($\bar{\psi}^a$ and \bar{T}^{abc}) can be treated as row (column) indices and those of $B_a{}^b$ and $\bar{B}_a{}^b$ are self-evident. From Eqs. (5) and (12), we can see that if a term is chirally invariant, all the row indices must be contracted with the column indices and vice versa. This is the reason why we write the row and column indices explicitly.

The covariant derivative D^{μ} acting on the baryon fields is [15,18,27]

$$D^{\mu}\psi_{a} = \partial^{\mu}\psi_{a} + \Gamma_{a}{}^{b,\mu}\psi_{b},$$

$$D^{\mu}B_{a}{}^{b} = \partial^{\mu}B_{a}{}^{b} + \Gamma_{a}{}^{c,\mu}B_{c}{}^{b} - B_{a}{}^{c}\Gamma_{c}{}^{b,\mu},$$

$$D^{\mu}T_{abc} = \partial^{\mu}T_{abc} + \Gamma_{a}{}^{d,\mu}T_{dbc} + \Gamma_{b}{}^{d,\mu}T_{adc} + \Gamma_{c}{}^{d,\mu}T_{abd}.$$
(13)

It seems that, in the three- (two)-flavor case, we can choose T^{μ}_{abc} , $\bar{T}^{abc,\mu}$, $B_a{}^b$, $\bar{B}_a{}^b$ (T^{μ}_{abc} , $\bar{T}^{abc,\mu}$, ψ_a , $\bar{\psi}^a$), and their covariant derivatives as building blocks, but it is a bit more complex for the spin-3/2 RS fields. We will discuss this issue in the next section.

III. STRUCTURES OF CHIRAL LAGRANGIANS WITH DECUPLET BARYONS

A similar discussion in this section has been presented in Ref. [22]. Here we only list the necessary ingredients for the Lagrangian construction. More details can be found in Refs. [17-21,40-56].

In this paper, we adopt the vector-spinor representation Ψ^{μ} ($\mu = 0, 1, 2, 3$) [41] for the spin-3/2 fields. The general Lagrangian for a free RS field with mass *m* reads [42]

$$\mathcal{L}_{\rm f} = \bar{\Psi}_{\mu} \Lambda_A^{\mu\nu} \Psi_{\nu},$$

$$\Lambda_A^{\mu\nu} = -\left[(i\partial \!\!\!/ - m) g^{\mu\nu} + iA(\gamma^{\mu}\partial^{\nu} + \gamma^{\nu}\partial^{\mu}) + \frac{i}{2}(3A^2 + 2A + 1)\gamma^{\mu}\partial\!\!\!/\gamma^{\nu} + m(3A^2 + 3A + 1)\gamma^{\mu}\gamma^{\nu} \right],$$
(14)

where $A \neq -1/2$ is an arbitrary real number. From this Lagrangian, one derives the equation of motion (EOM) and two subsidiary conditions:

$$(i\partial - m)\Psi_{\mu} = 0, \tag{15}$$

$$\gamma^{\mu}\Psi_{\mu} = 0, \qquad (16)$$

$$\partial^{\mu}\Psi_{\mu} = 0. \tag{17}$$

The two unphysical spin- $\frac{1}{2}$ degrees of freedom in the vectorspinor representation can be eliminated with these two subsidiary conditions.

There exists a so-called "point" or "contact" transformation under which the above Lagrangian is invariant,

$$\Psi_{\mu} \to \Psi'_{\mu} = \Psi_{\mu} + \frac{1}{2} a \gamma_{\mu} \gamma_{\nu} \Psi^{\nu}, \qquad (18)$$

$$A \to A' = \frac{A-a}{1+2a}, \qquad a \neq -\frac{1}{2}.$$
 (19)

The choice for the value of A does not affect physical quantities [50,55,57]. Therefore, one may simplify the above Lagrangian by a field redefinition [48],

$$\mathcal{L}_{\rm f} = \bar{\psi}_{A\mu} \Lambda^{\mu\nu} \psi_{A\nu},$$

$$\Lambda^{\mu\nu} = -(i\partial \!\!\!/ - m)g^{\mu\nu} + \frac{1}{4}\gamma^{\mu}\gamma^{\lambda}(i\partial \!\!\!/ - m)\gamma_{\lambda}\gamma^{\nu}, \quad (20)$$

where $\psi_A^{\mu} \equiv O_A^{\mu\nu} \Psi_{\nu} = (g^{\mu\nu} + \frac{1}{2}A\gamma^{\mu}\gamma^{\nu})\Psi_{\nu}$. Now, $\Lambda^{\mu\nu}$ is independent of *A*, and the *A* dependence is implied in ψ_A^{μ} .

For the meson-decuplet-decuplet (MTT) interactions, the chiral Lagrangian has the form

$$\mathcal{L}_{\text{MTT}} = \bar{T}^{abc}_{\mu} \Lambda^{def,\mu\nu}_{A,abc} T_{def,\nu}, \qquad (21)$$

$$\begin{split} \Lambda_{A,abc}^{def,\mu\nu} &= -\left[(i\not\!\!D - m_T)g^{\mu\nu} + iA(\gamma^{\mu}D^{\nu} + \gamma^{\nu}D^{\mu}) \right. \\ &+ \frac{i}{2}(3A^2 + 2A + 1)\gamma^{\mu}\not\!\!D\gamma^{\nu} \\ &+ m_T(3A^2 + 3A + 1)\gamma^{\mu}\gamma^{\nu}\right] \delta_a{}^d\delta_b{}^e\delta_c{}^f \\ &+ O_{1,A,abc}^{def,\mu\nu}, \end{split}$$
(22)

where m_T is the decuplet mass in the SU(3) limit and $O_{1,A,abc}^{def,\mu\nu}$ contains the meson fields and the external sources. Then the EOM and the subsidiary conditions in ChPT are

$$(i\not\!\!\!D - m_T)T^{\mu}_{abc} \doteq 0, \tag{23}$$

$$D_{\mu}T^{\mu}_{abc} \doteq 0, \qquad (24)$$

$$\gamma_{\mu}T^{\mu}_{abc} \doteq 0, \qquad (25)$$

where the symbol " \doteq " means that both sides are equal if high-order terms are ignored. We may write the structure of any term in $O_{1,abc}^{def,\mu\nu}$ as [17,21,22]

$$\bar{T}^{abc,\mu}O_{\dots}^{\dots}\Theta_{\dots}^{\dots}T_{def}^{\nu} + \text{H.c.}, \qquad (26)$$

where \cdots denotes suitable flavor and Lorentz indices, O_{\dots}^{\dots} is the product of the building blocks with the meson fields and the external sources in Sec. II A, and Θ_{\dots}^{\dots} contains a Clifford algebra element $\Gamma \in \{1, \gamma_{\mu}, \gamma_{5}, \gamma_{5}\gamma_{\mu}, \sigma_{\mu\nu}\}$, the Levi-Civita tensors in Lorentz space $\varepsilon^{\mu\nu\lambda\rho}$, and the covariant derivatives acting on T_{def}^{ν} . Up to the order $\mathcal{O}(p^{4})$, the structures of Θ_{\dots}^{\dots} can be found below Eq. (49) in Ref. [22].

With the structure in Eq. (26), the low-energy constants (LECs) in $O_{1,abc}^{def,\mu\nu}$ are dependent on *A*. One can absorb the parameter *A* into the redefined RS fields according to the point transformation [Eqs. (18) and (20)]. Then the Lagrangian (22) can be rewritten as

$$\mathcal{L}_{\mathrm{MTT}} = -\bar{T}^{abc}_{A,\mu} \left[(i\not\!\!\!D - m_T) g^{\mu\nu} - \frac{1}{4} \gamma^{\mu} \gamma^{\lambda} (i\not\!\!\!D - m_T) \gamma_{\lambda} \gamma^{\nu} \right] \bar{T}_{A,abc,\nu} + \bar{T}^{abc}_{A,\mu} O^{def,\mu\nu}_{1,abc} T_{A,def,\nu},$$
(27)

where $T^{\mu}_{A,abc} = O^{\mu\nu}_A T_{abc,\nu}$. Now, the LECs in Eq. (27) are independent of A, but the invariant monomials have the same structures as those in Eq. (22); i.e., one may get Eq. (27) from Eq. (22) by changing $T_{abc,\mu}$ to $T_{A,abc,\mu}$ only. The LECs in these two equations are equal if A = 0. Physically, we can choose any value of A ($A \neq -1/2$) (A = -1 is a simple and widely used value). In the final results (Sec. V), we only give the structures in Eq. (22).

The new form $\pi\Delta\Delta$ Lagrangians are very similar to the MTT Lagrangians. The differences lie only in the baryon mass and the flavor indices. By changing m_T to m_{Δ} (Δ mass in the chiral limit) and limiting all the flavor indices to 1 and 2, the new form of $\pi\Delta\Delta$ Lagrangians is obtained.

For the meson-octet-decuplet and $\pi N\Delta$ interactions, the chiral Lagrangians have the following structures, respectively,

$$\epsilon^{abc} \bar{B}_d^{\ e} O_{\dots} \Theta_{\dots} T^{\mu}_{A,n,fgh} + \text{H.c.}, \qquad (28)$$

$$\epsilon^{ab}\bar{\psi}^c O_{\dots}^{\dots}\Theta_{\dots}^{\mu}T^{\mu}_{A,n,def} + \text{H.c.}, \qquad (29)$$

where $O_{...}^{...}$ and $\Theta_{...}^{...}$ have the same meanings as those in Eq. (26). For the Levi-Civita tensor, we have column indices in ϵ^{abc} (*a*, *b*, *c* = 1, 2, 3) and row indices in ϵ_{abc} (in the H.c. part). Here, $\epsilon^{ab} \equiv \epsilon^{ab3}$. The RS field depending on *A* is defined through

$$T_{A,n,fgh,\mu} = \Theta_{A,n,\mu\nu}(z_n) T^{\nu}_{fgh}, \qquad (30)$$

$$\Theta_{A,n,\mu\nu}(z_n) = g_{\mu\nu} + \left[z_n + \frac{1}{2} (1 + 4z_n) A \right] \gamma_{\mu} \gamma_{\nu}$$

$$\equiv \Theta_{n,\mu\alpha}(z_n) O^{\alpha}_{A\nu} = O_{A\mu}{}^{\alpha} \Theta_{n,\alpha\nu}(z_n),$$

$$\Theta_{n,\mu\alpha}(z_n) \equiv g_{\mu\alpha} + z_n \gamma_{\mu} \gamma_{\alpha}.$$
(31)

Some z_n parameters are needed because of the point transformation [58]. They can be obtained from experiments. In Eqs. (28) and (29), the point-invariant structures have been implied and the LECs are already independent of A.

To construct Lagrangians, for the baryon fields, we choose T^{μ}_{abc} , $\bar{T}^{abc,\mu}$, $T^{\mu}_{A,abc}$, $\bar{T}^{abc,\mu}_{A}$, $B_{a}{}^{b}$, $\bar{B}_{a}{}^{b}$, and their covariant derivatives as building blocks in the three-flavor case. In the two-flavor case, we adopt T^{μ}_{abc} , $\bar{T}^{abc,\mu}_{A,c}$, $T^{\mu}_{A,abc}$, $\bar{T}^{abc,\mu}_{A}$, ψ_{a} , $\bar{\psi}^{a}$, and their covariant derivatives.

IV. PREPARATIONS FOR LAGRANGIAN CONSTRUCTION

In this section, we make preparations for the construction of chiral Lagrangians with decuplet baryons. The new form of chiral Lagrangians with Δ is understood. The recipes are very similar to those in constructing Lagrangians for mesons, meson-baryon systems, and the $\pi - N - \Delta$ systems in Refs. [12,20,22].

A. Power counting and transformation properties

The chiral dimensions [2–4,6,17,18] of the building blocks with the external sources are listed in the second column of Table I and those of the Clifford algebra and the

TABLE I. Chiral dimension (Dim), parity (P), charge conjugation (C), and Hermiticity (H.c.) of the building blocks with the external sources.

	Dim	Р	С	H.c.
$u_a{}^{b,\mu}$	1	$-u_a{}^b{}_\mu$	$u_b{}^{a,\mu}$	$u_a{}^{b,\mu}$
$h_a{}^{b,\mu\nu}$	2	$-h_a{}^b{}_{\mu\nu}$	$h_b{}^{a,\mu u}$	$h_a{}^{b,\mu u}$
$\chi_{\pm,a}{}^b$	2	$\pm \chi_{\pm,a}{}^b$	$\chi_{\pm,b}{}^a$	$\pm \chi_{\pm,a}{}^b$
$\chi_{\pm,s}$	2	$\pm \chi_{\pm,s}$	$\chi_{\pm,s}$	$\pm \chi_{\pm,s}$
$f_{\pm,a}{}^{b,\mu\nu}$	2	$\pm f_{\pm,a}{}^{b}{}_{\mu\nu}$	$\mp f_{\pm,b}{}^{a,\mu\nu}$	$f_{\pm,a}{}^{b,\mu\nu}$
$f_{+,s}^{\mu\nu}$	2	$f_{+,s,\mu\nu}$	$-f_{+,s}{}^{\mu\nu}$	$f_{+,s}{}^{\mu\nu}$

Levi-Civita tensors are given in the second column of Table II [17,18,56]. The baryon fields are chiral dimensionless and the information is not shown in these tables. The covariant derivatives acting on the meson fields and the external sources are counted as $\mathcal{O}(p^1)$, but those acting on the baryon fields are counted as $\mathcal{O}(p^0)$.

The chiral Lagrangian should be invariant under the chiral rotation (R), parity transformation (P), charge conjugation transformation (C), and Hermitian transformation (h.c.). The chiral rotations for the building blocks have been discussed in Eqs. (5) and (12). The P, C, and h.c. transformations are almost the same as those in Ref. [22] and we also present such properties in Tables I and II. Only different properties will be mentioned.

Compared with Table I of Ref. [22], Table I here shows the flavor indices explicitly. The meanings of plus and minus signs in Table II are the same as those in Refs. [17,20,22]. One thing different is the e^{ijk} . This symbol in Ref. [22] is in the isovector space and it absorbs a minus sign in *C* transformations (Eq. (31) of Ref. [22]). But now e^{abc} and e^{ab} are the Levi-Civita tensors in the three- (two)-flavor space. They do not need to absorb an extra minus sign.

TABLE II. Chiral dimension (Dim), parity (*P*), charge conjugation (*C*), and Hermiticity (H.c.) of the Clifford algebra elements, the Levi-Civita tensors, and the covariant derivatives. The subscript "TT" ("BT") denotes the meson-decuplet-decuplet (meson-octet-decuplet) interactions in the three flavors ($\pi\Delta\Delta$ ($\pi N\Delta$) interactions in the two-flavor case). Ψ denotes any baryon field, decuplet baryon, Δ , octet baryon, or nucleon. e^{abc} (e^{ab}) is the Levi-Civita tensor in three- (two)-flavor space. The meaning of the plus or minus sign is explained in the text.

	Dim	$P_{\rm TT}$	C_{TT}	H.c. _{TT}	$P_{\rm BT}$	$C_{\rm BT}$	H.c. _{BT}
1	0	+	+	+	_	+	+
γ5	1	_	+	_	+	+	_
γ^{μ}	0	+	_	+	_	_	+
$\gamma_5 \gamma^{\mu}$	0	_	+	+	+	+	+
$\sigma^{\mu u}$	0	+	_	+	—	_	+
$\epsilon^{\mu\nu\lambda ho}$	0	_	+	+	—	+	+
ϵ^{abc}	0	+	+	+	+	+	+
ϵ^{ab}	0	+	+	+	+	+	+
$D^{\mu}\Psi$	0	+	-	_	+	+	+

B. Linear relations

Some linear relations exist in reducing the chiralinvariant terms to a minimal set. The relations coming from partial integration, EOM, covariant derivatives, and Bianchi identity are the same as those in Ref. [22]. The relations coming from the Cayley-Hamilton relation are the same as those in Ref. [6]. We will not discuss them any more and we only focus on the different and new relations in the following parts.

1. Schouten identity

The Schouten identity in the Lorentz space is the same as that in Ref. [22], but some differences exist in the flavor space. For the Levi-Civita tensor e^{abc} (e^{ab}) in the three- (two)-flavor space, the Schouten identities for any operator A are

$$0 = \epsilon_{abc}A_d - \epsilon_{dbc}A_a - \epsilon_{adc}A_b - \epsilon_{abd}A_c,$$

$$0 = \epsilon_{ab}A_c - \epsilon_{cb}A_a - \epsilon_{ac}A_b.$$
(32)

There are two types of indices in A (row or column). Equation (32) works only for the case that the indices in the Levi-Civita tensor and the indices in A are the same type.

2. Fierz transformations

The basic Fierz transformation for the Pauli matrices is

$$\tau^{i}_{ab}\tau^{i}_{cd} = 2\delta_{ad}\delta_{cb} - \delta_{ab}\delta_{cd}.$$
(33)

With this equation, for any two 2×2 building blocks X_a^b and Y_a^b in Table I, one may obtain [59]

$$X_{a}{}^{d}Y_{b}{}^{e} = \frac{1}{2} (Y_{a}{}^{e}X_{b}{}^{d} + X_{a}{}^{e}Y_{b}{}^{d} + X_{c}{}^{f}Y_{f}{}^{c}\delta_{a}{}^{e}\delta_{b}{}^{d} - X_{c}{}^{f}Y_{f}{}^{c}\delta_{a}{}^{d}\delta_{b}{}^{e} + X_{a}{}^{c}Y_{c}{}^{e}\delta_{b}{}^{d} - \delta_{a}{}^{e}X_{b}{}^{c}Y_{c}{}^{d}).$$
(34)

The basic Fierz transformation for the Gall-Mann matrices is

$$\lambda_{ac}^{i}\lambda_{bd}^{i} = 2\delta_{ad}\delta_{cb} - \frac{2}{3}\delta_{ac}\delta_{bd}.$$
 (35)

With the relation in Ref. [60] and the properties of the structure constants of SU(3), one finds that the following relation exists for any two 3×3 building blocks X_a^b and Y_a^b in Table I,

$$0 = X_{a}^{b}Y_{c}^{d} - X_{a}^{d}Y_{c}^{b} - X_{c}^{b}Y_{a}^{d} + X_{c}^{d}Y_{a}^{b} + X_{a}^{e}Y_{e}^{b}\delta_{c}^{d} - X_{a}^{e}Y_{e}^{d}\delta_{c}^{b} - X_{c}^{e}Y_{e}^{b}\delta_{a}^{d} + X_{c}^{e}Y_{e}^{d}\delta_{a}^{b} + \delta_{a}^{b}Y_{c}^{e}X_{e}^{d} - \delta_{a}^{d}Y_{c}^{e}X_{e}^{b} - \delta_{c}^{b}Y_{a}^{e}X_{e}^{d} + \delta_{c}^{d}Y_{a}^{e}X_{e}^{b} - X_{e}^{f}Y_{f}^{e}\delta_{a}^{b}\delta_{c}^{d} + X_{e}^{f}Y_{f}^{e}\delta_{a}^{d}\delta_{c}^{b}.$$
(36)

3. Contact terms

The method to construct contact terms is the same as that in Ref. [22]. In the two- (three)-flavor case, the total number of the contact terms is six (five) and we list them in the end of Table V. The last term in Table V is at the $\mathcal{O}(p^6)$ order in the SU(3) case.

C. Relations between the original chiral Lagrangians with Δ and the new ones

In Ref. [22], we have obtained the chiral Lagrangians with Δ to one loop. There, the Δ fields are represented by an isovector-isospinor RS field ψ_i^{μ} (i = 1, 2, 3). Now, we use a totally symmetrical tensor T_{abc}^{μ} (a, b, c = 1, 2) to represent them. The difference lies only in the flavor representations. By some calculations, one gets the following relations between these two formalisms of interaction terms,

$$\bar{T}^{abc}OT_{abc} = \bar{\psi}_i O\psi_i, \tag{37}$$

$$\bar{T}^{abe}O_e{}^fT_{abf} = \bar{\psi}_i O_j \tau_j \psi_i, \qquad (38)$$

$$\bar{T}^{abc}X_{b}{}^{e}Y_{c}{}^{f}T_{aef} = \bar{\psi}_{i}X_{j}Y_{j}\psi_{i} - \bar{\psi}_{i}X_{i}Y_{j}\psi_{j} - \bar{\psi}_{i}X_{j}Y_{i}\psi_{j},$$
(39)

$$\bar{T}^{abc}X_a{}^dY_b{}^eZ_c{}^fT_{def} = \frac{1}{6}\bar{\psi}_iX_lY_j\tau_jZ_l\psi_i -\frac{1}{3}\bar{\psi}_iX_iY_k\tau_kZ_j\psi_j +P(X,Y,Z),$$
(40)

$$\epsilon^{ab}\bar{\psi}^c O_a{}^f T_{bcf} = \sqrt{2}\bar{\psi}O_i\psi_i,\tag{41}$$

$$\epsilon^{ab}\bar{\psi}^{c}X_{a}^{\ e}Y_{c}^{\ f}T_{ebf} = \sqrt{2}\bar{\psi}X_{i}Y_{j}\tau_{j}\psi_{i}, \qquad (42)$$

$$\epsilon^{ab}\bar{\psi}^{c}X_{a}^{\ e}Y_{b}^{\ f}T_{efc} = \sqrt{2}i\epsilon_{ijk}\bar{\psi}X_{i}Y_{j}\psi_{k}, \tag{43}$$

$$\epsilon^{ab}\bar{\psi}^c X_a{}^d Y_b{}^e Z_c{}^f T_{def} = \sqrt{2}i\epsilon_{ijk}\bar{\psi}X_i Y_j Z_l\tau_l\psi_k, \quad (44)$$

where P(X, Y, Z) means all permutations for the symbols X, Y, and Z. O, O_i, X_i, Y_i and Z_i are building blocks in Ref. [22] or their products. The definitions of the symbols in the right-hand side can be found in Ref. [22].

Alternatively, we may transform the original formalism to the new one. To do that, we define transition isospin I^{j} through $\psi_{j} = I_{j}\phi$ with $\phi = (\Delta^{++}, \Delta^{+}, \Delta^{0}, \Delta^{-})^{T}$. Similarly, we define $T_{abc} = W^{i}_{abc}\phi^{i}$. The matrix forms of I^{j} and the values of W^{i}_{abc} are easy to obtain from the definitions. We have two relations in connecting the original $\pi\Delta\Delta$ Lagrangians with the new ones,

$$(I_{i}^{\dagger}I_{j})_{x}^{y} = \frac{1}{2} [W_{x}^{abc}(\tau_{i}\tau_{j})_{a}^{d}W_{bcd}^{y} - W_{x}^{abc}(\tau_{i})_{a}^{d}(\tau_{j})_{b}^{e}W_{cde}^{y}],$$
(45)

$$(I_{i}^{\dagger}\tau_{l}I_{j})_{x}^{y} = \frac{1}{2} [W_{x}^{abc}(\tau_{i}\tau_{j})_{a}^{d}(\tau_{l})_{b}^{e}W_{cde}^{y} - W_{x}^{abc}(\tau_{i})_{a}^{d}(\tau_{j})_{b}^{e}(\tau_{l})_{c}^{f}W_{def}^{y}].$$
(46)

For the special case j = i, one has

$$(I_i^{\dagger}I_i)_x^{\ y} = W_x^{abc}W_{abc}^y, \tag{47}$$

$$(I_{i}^{\dagger}\tau_{l}I_{i})_{x}^{y} = W_{x}^{abc}(\tau_{l})_{a}^{\ d}W_{bcd}^{y}.$$
(48)

To connect the original $\pi N\Delta$ Lagrangians with the new ones, we may use

$$(I_i)_x{}^y = \frac{1}{\sqrt{2}} \epsilon^{3ab} (\tau_i)_a{}^c W^y_{xbc},$$
(49)

$$(\tau_i I_j)_x{}^y = \frac{1}{\sqrt{2}} \epsilon^{3ab} (\tau_i)_x{}^c (\tau_j)_a{}^d W^y_{bcd}.$$
 (50)

Note $(\tau_i I_j)_x^y \neq \frac{1}{\sqrt{2}} e^{3ab} (\tau_i)_a^c (\tau_j)_x^d W_{bcd}^y$. Substituting these six equations into the right-hand sides of Eqs. (37)–(44), one may prove the equivalence of the two sets of relations by using the formula $e^{3ab} (\tau_i \tau_j)_a^c W_{xbc}^y = e^{3ab} (\tau_i)_a^c (\tau_j)_b^d W_{xcd}^y$.

V. RESULTS AND DISCUSSIONS

Following the same steps from Sec. IV C to Sec. IV E in Ref. [22], we obtain the chiral Lagrangians with decuplet baryons up to the order $\mathcal{O}(p^4)$ and list them below.

A. $\mathcal{O}(p^1)$ order

In the three-flavor case, the lowest order mesondecuplet-decuplet chiral Lagrangian is

$$\mathcal{L}_{\mathrm{MTT}}^{(1)} = \dots + C_1^{(1)} \bar{T}^{abc\mu} u_a{}^{d\nu} \gamma_5 \gamma_\nu T_{bcd\mu}, \qquad (51)$$

where $C_1^{(1)}$ is the low-energy constant at this order and the ellipsis represents the terms coming from the first part in Eq. (22). The lowest order meson-octet-decuplet chiral Lagrangian reads

$$\mathcal{L}_{\rm MBT}^{(1)} = D_1^{(1)} \epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} T_{cde\mu} + \text{H.c..}$$
(52)

In the two-flavor case, the lowest order $\pi\Delta\Delta$ chiral Lagrangian has the same form as Eq. (51),

$$\mathcal{L}^{(1)}_{\pi\Delta\Delta} = \dots + e_1^{(1)} \bar{T}^{abc\mu} u_a{}^{d\nu} \gamma_5 \gamma_\nu T_{bcd\mu}.$$
 (53)

The difference lies only in the allowed numbers for the indices *a*, *b*, *c*, and *d*. Similarly, the lowest order $\pi N\Delta$ chiral Lagrangian can be written as

$$\mathcal{L}_{\pi N\Delta}^{(1)} = f_1^{(1)} (\epsilon^{ab} \bar{\psi}^c u_a{}^{d\mu} T_{A,n,bcd\mu} + \text{H.c.}).$$
(54)

We have confirmed the previous results in Ref. [22] with the newly constructed Lagrangians. With the relations in the last section, we get the relations between these two kinds of LECs,

$$e_1^{(1)} = c_1^{(1)} = \frac{1}{2}g_1, \qquad f_1^{(1)} = \frac{1}{\sqrt{2}}g_{\pi N\Delta}.$$
 (55)

B. $\mathcal{O}(p^2)$ order

The $\mathcal{O}(p^2)$ order meson-decuplet-decuplet chiral Lagrangian has the form

$$\mathcal{L}_{\rm MTT}^{(2)} = \sum_{n=1}^{13} C_n^{(2)} O_n^{(3,2)}, \qquad (56)$$

where the operators $O_n^{(N_f=3,2)}$ are listed in Table III. The meson-octet-decuplet chiral Lagrangian at this order is

$$\mathcal{L}_{MBT}^{(2)} = D_{1}^{(2)} (\epsilon^{abc} \bar{B}_{a}{}^{d} u_{b}{}^{e\mu} u_{c}{}^{f\nu} \gamma_{5} \gamma_{\mu} T_{A,n,def\nu} + \text{H.c.}) + D_{2}^{(2)} (\epsilon^{abc} \bar{B}_{a}{}^{d} u_{b}{}^{e\mu} u_{d}{}^{f\nu} \gamma_{5} \gamma_{\mu} T_{A,n,cef\nu} + \text{H.c.}) + D_{3}^{(2)} (\epsilon^{abc} \bar{B}_{a}{}^{d} u_{b}{}^{e\mu} u_{e}{}^{f\nu} \gamma_{5} \gamma_{\mu} T_{A,n,cdf\nu} + \text{H.c.}) + D_{4}^{(2)} (\epsilon^{abc} \bar{B}_{a}{}^{d} u_{b}{}^{e\mu} u_{e}{}^{f\nu} \gamma_{5} \gamma_{\nu} T_{A,n,cdf\mu} + \text{H.c.}) + D_{5}^{(2)} (i\epsilon^{abc} \bar{B}_{a}{}^{d} f_{+b}{}^{e\mu\nu} \gamma_{5} \gamma_{\mu} T_{A,n,cde\nu} + \text{H.c.}).$$
(57)

This result is consistent with that in Ref. [34].

The new form of the $\pi\Delta\Delta$ chiral Lagrangian at the $\mathcal{O}(p^2)$ order is

$$\mathcal{L}_{\pi\Delta\Delta}^{(2)} = \sum_{n=1}^{11} e_n^{(2)} O_n^{(2,2)}, \tag{58}$$

TABLE III. The order $\mathcal{O}(p^2)$ meson-decuplet-decuplet ($\pi\Delta\Delta$) chiral Lagrangians, and the relations between $\pi\Delta\Delta$ LECs here and those in Ref. [22].

$O_n^{(n_f,2)}$	SU(2)	SU(3)	$e_n^{(2)}$
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}T_{cde\nu}$	1	1	$-c_1^{(2)}/2 - c_2^{(2)}/2$
$\bar{T}^{abc\mu}u_a{}^{d u}u_b{}^e{}_{ u}T_{cde\mu}$	2	2	$-c_3^{(2)}/2$
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_d{}^{e\nu}T_{bce\nu}$	3	3	$c_1^{(2)}/2 + c_4^{(2)}/2$
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\mu}T_{bce\nu}$	4	4	$c_{2}^{(2)}/2 + c_{4}^{(2)}/2$
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\nu}T_{bce\mu}$	5	5	$c_3^{(2)}/2 + c_5^{(2)}$
$\bar{T}^{abc\mu}u^{de}{}_{\mu}u_{ed}{}^{\nu}T_{abc\nu}$		6	5, 5
$\bar{T}^{abc\mu} u^{de\nu} u_{ed\nu} T_{abc\mu}$		7	
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}D_{\nu\lambda}T_{cde\mu}$	6	8	$-c_{6}^{(2)}/2$
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}D_{\nu\lambda}T_{bce\mu}$	7	9	$c_6^{(2)}/2 + c_7^{(2)}$
$\bar{T}^{abc\mu}u^{de u}u_{ed}{}^{\lambda}D_{ u\lambda}T_{abc\mu}$		10	0. /
$i\bar{T}^{abc\mu}f_{s,+\mu}{}^{\nu}T_{abc\nu}$	8		$c_{8}^{(2)}$
$i \bar{T}^{abc\mu} f_{+a}{}^d{}_^ u T_{bcd u}$	9	11	$c_{9}^{(2)}$
$ar{T}^{abc\mu}\chi_{+,s}T_{abc\mu}$	10	12	$c_{10}^{(2)}$
$ar{T}^{abc\mu}\chi_{+a}{}^dT_{bcd\mu}$	11	13	$c_{11}^{(2)}$

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where the operators $O_n^{(N_f=2,2)}$ can also be found in Table III. The new form $\pi N\Delta$ chiral Lagrangian reads

$$\mathcal{L}_{\pi N \Delta}^{(2)} = f_1^{(2)} (\epsilon^{ab} \bar{\psi}^c u_a^{\ d\mu} u_b^{\ e\nu} \gamma_5 \gamma_\mu T_{A,n,cde\nu} + \text{H.c.}) + f_2^{(2)} (\epsilon^{ab} \bar{\psi}^c u_a^{\ d\mu} u_c^{\ e\nu} \gamma_5 \gamma_\mu T_{A,n,bde\nu} + \text{H.c.}) + f_3^{(2)} (i \epsilon^{ab} \bar{\psi}^c f_{+a}^{\ d\mu\nu} \gamma_5 \gamma_\mu T_{A,n,bcd\nu} + \text{H.c.}).$$
(59)

This result is consistent with the Lagrangian in Ref. [22]. We present the relations between these two kinds of $\pi\Delta\Delta$ LECs in the last column of Table III. The obtained relations for the $\pi N\Delta$ LECs are

$$f_1^{(2)} = -\frac{1}{\sqrt{2}}d_1^{(2)},\tag{60}$$

$$f_2^{(2)} = \frac{1}{\sqrt{2}}d_1^{(2)} + \frac{1}{\sqrt{2}}d_2^{(2)},\tag{61}$$

$$f_3^{(2)} = \frac{1}{\sqrt{2}} d_3^{(2)}.$$
 (62)

C. $\mathcal{O}(p^3)$ and $\mathcal{O}(p^4)$ orders

We define the $\mathcal{O}(p^3)$ and $\mathcal{O}(p^4)$ chiral Lagrangians as

$$\mathcal{L}_{\text{MTT}}^{(m)} = \sum_{n} C_{n}^{(m)} O_{n}^{(3,m)}, \tag{63}$$

$$\mathcal{L}_{\rm MBT}^{(m)} = \sum_{n} D_{n}^{(m)} (P_{n}^{(3,m)} + \text{H.c.}), \tag{64}$$

$$\mathcal{L}_{\pi\Delta\Delta}^{(m)} = \sum_{n} e_{n}^{(m)} O_{n}^{(2,m)},$$
(65)

$$\mathcal{L}_{\pi N\Delta}^{(m)} = \sum_{n} f_{n}^{(m)} (P_{n}^{(2,m)} + \text{H.c.}),$$
(66)

where m = 3 or 4 denotes the chiral dimension, $C_n^{(m)}$, $D_n^{(m)}$, $e_n^{(m)}$, and $f_n^{(m)}$ are the LECs, and $O_n^{(N_f,m)}$ and $P_n^{(N_f,m)}$ are the independent chiral-invariant terms in the N_f -flavor case. The results are listed in the Appendix. At the $\mathcal{O}(p^3)$ order, the meson-decuplet-decuplet ($\pi\Delta\Delta$) Lagrangians are presented in Table IV. There are 55 (38) independent terms in the SU(3)(SU(2)) case. The meson-octet-decuplet $(\pi N\Delta)$ Lagrangians are given in Table VI. There are 67 (33) independent terms in the SU(3) (SU(2)) case. At the $\mathcal{O}(p^4)$ order, the mesondecuplet-decuplet $(\pi\Delta\Delta)$ Lagrangians are presented in Table V. There are 548 (318) independent terms in the SU(3) (SU(2)) case. The meson-octet-decuplet ($\pi N\Delta$) Lagrangians are listed in Table VII. There are 611 (218) independent terms in the SU(3) (SU(2)) case. Note that the z_n parameters should be different for the meson-octet-decuplet and $\pi N\Delta$ Lagrangians at the different orders, but we do not distinguish them explicitly in the results.

To merge the meson-octet-decuplet and the $\pi N\Delta$ results, similar to those for the meson-decuplet-decuplet and $\pi\Delta\Delta$, we write them in a unified form. We have changed the SU(2) results with $e^{ab}\bar{\psi}^c \rightarrow e^{dab}\bar{B}_d^c$ by setting d = 3 but a, b, c = 1, 2 as before. Now, one can get the SU(2) results from corresponding terms in Table VI and Table VII with

$$\epsilon^{abc}\bar{B}_a{}^d\dots \xrightarrow{N_f=2} \epsilon^{bc}\bar{\psi}^d\dots$$
(67)

Because the number of LECs in $\mathcal{O}(p^3)$ and $\mathcal{O}(p^4)$ Lagrangians is large and only several LECs will be involved in a study, we here do not give the LEC relations between the new and original results at high orders. Each form of Lagrangian can be chosen to study low-energy processes. One may use relations in Sec. IV C to determine LECs from another form terms, if necessary.

From the results, one can see that not only the total number of terms but also the numbers in each type of external source in the chiral Lagrangians with Δ are the same as those in Ref. [22]. The equality in number is a strict condition for consistency of Lagrangians in different forms. The violation of this condition means that the number of terms in either or both forms is not minimal. This check confirms our previous results.

VI. SUMMARY

In this paper, we construct the relativistic chiral Lagrangians with decuplet baryons and give a new form

of the chiral Lagrangians with $\Delta(1232)$ to one loop. These chiral Lagrangians are for the meson-decupletdecuplet, meson-octet-decuplet, $\pi\Delta\Delta$, and $\pi N\Delta$ interactions. The correspondence between the $\pi\Delta\Delta$ and $\pi N\Delta$ chiral Lagrangians in Ref. [22] and those in the present form can be obtained with the relations we get in Sec. IV C.

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Note added in proof.—After the manuscript was submitted, a work for the next-to-leading order relativistic chiral Lagrangian (Ref. [61]) appeared. The Lagrangians are consistent once the item (vi) below Eq. (46) of Ref. [22] is noted.

APPENDIX: INDEPENDENT TERMS IN $\mathcal{O}(p^3)$ AND $\mathcal{O}(p^4)$ CHIRAL LAGRANGIANS WITH DECUPLET BARYONS

$O_n^{(N_f,3)}$	SU(2)	SU(3)	$O_n^{(N_f,3)}$	SU(2)	SU(3)
$\overline{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_c{}^{f\lambda}\gamma_5\gamma_{\nu}T_{def\lambda}$	1	1	$\bar{T}^{abc\mu}u_a{}^{d\nu}f_{-d}{}^e{}_{\mu}{}^{\lambda}D_{\nu}T_{bce\lambda}$ + H.c.	15	30
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_d{}^{f\lambda}\gamma_5\gamma_{\nu}T_{cef\lambda}$	2	2	$\bar{T}^{abc\mu}u_a{}^{d\nu}f_{-d}{}^{e}{}_{\mu}{}^{\lambda}D_{\lambda}T_{bce\nu}$ + H.c.	16	31
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_d{}^{f\lambda}\gamma_5\gamma_\lambda T_{cef\nu}$ + H.c.	3	3	$\bar{T}^{abc\mu}u_a{}^{d\nu}f_{-d}{}^{e}_{\nu}{}^{\lambda}D_{\lambda}T_{bce\mu}$ + H.c.	17	32
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_e{}^{f\lambda}\gamma_5\gamma_\lambda T_{cdf\nu}$ + H.c.	4	4	$\bar{T}^{abc\mu} u^{de}{}_{\mu} f_{-ed}{}^{\nu\lambda} D_{\nu} T_{abc\lambda} + \text{H.c.}$		33
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_c{}^{f\lambda}\gamma_5\gamma_{\lambda}T_{def\mu}$	5	5	$\bar{T}^{abc\mu} u^{de\nu} f_{-ed\mu}{}^{\lambda} D_{\nu} T_{abc\lambda}$		34
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_d{}^{e\nu}u_e{}^{f\lambda}\gamma_5\gamma_{\nu}T_{bcf\lambda}$		6	$\bar{T}^{abc\mu}u_a{}^d{}_\mu h_d{}^{e\nu\lambda}D_\nu T_{bce\lambda} + \text{H.c.}$	18	35
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_d{}^{f\lambda}\gamma_5\gamma_{\lambda}T_{cef\mu}$ + H.c.	6	7	$\bar{T}^{abc\mu}u_a{}^{d\nu}h_d{}^e{}_{\nu}{}^{\lambda}D_{\lambda}T_{bce\mu} + \text{H.c.}$	19	36
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^{f}{}_{\mu}\gamma_5\gamma_{\lambda}T_{cef\nu}$	7	8	$\bar{T}^{abc\mu}u_a{}^{d\nu}h_d{}^{e\lambda\rho}D_{\nu\lambda\rho}T_{bce\mu}$ + H.c.	20	37
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_d{}^{e\nu}u_e{}^{f\lambda}\gamma_5\gamma_{\lambda}T_{bcf\nu}$ + H.c.		9	$\bar{T}^{abc\mu}\nabla^{\nu}f_{-a}{}^{d}{}_{\nu}{}^{\lambda}\gamma_{5}\gamma_{\lambda}T_{bcd\mu}$	21	38
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^f{}_{\nu}\gamma_5\gamma_{\lambda}T_{cef\mu}$	8	10	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}^{\nu}u_{b}{}^{e\lambda}\gamma_{5}\gamma_{\nu}T_{cde\lambda}$ + H.c.	22	39
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u^{ef\nu}u_{fe}{}^\lambda\gamma_5\gamma_\nu T_{bcd\lambda}$ + H.c.		11	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}^{\nu}u_{b}{}^{e\lambda}\gamma_{5}\gamma_{\lambda}T_{cde\nu}$	23	40
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e}{}_{\mu}u_e^{\ f\lambda}\gamma_5\gamma_{\lambda}T_{bcf\nu}$ + H.c.		12	$i\bar{T}^{abc\mu}f_{+a}d^{\mu}{}^{\nu}u_{d}{}^{e\lambda}\gamma_{5}\gamma_{\nu}T_{bce\lambda}$ + H.c.	24	41
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_e^{\ e}u_e^{\ f\lambda}\gamma_5\gamma_\lambda T_{bcf\mu}$ + H.c.		13	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}^{\nu}u_{d}{}^{e\lambda}\gamma_{5}\gamma_{\lambda}T_{bce\nu}$ + H.c.	25	42
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e\lambda}u_e^{\ f}_{\ \mu}\gamma_5\gamma_{\lambda}T_{bcf\nu}$		14	$i\bar{T}^{abc\mu}f_{+a}^{\ d\nu\lambda}u_d^{\ e}_{\ \mu}\gamma_5\gamma_{\nu}T_{bce\lambda}$ + H.c.	26	43
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e\lambda}u_e^{\ f}_{\ \nu}\gamma_5\gamma_{\lambda}T_{bcf\mu}$		15	$i\bar{T}^{abc\mu}f_{+a}^{\ d\nu\lambda}u_d^{\ e}{}_{\nu}\gamma_5\gamma_{\lambda}T_{bce\mu}$ + H.c.	27	44
$\bar{T}^{abc\mu}u_a^{\ d\nu}u^{ef}_{\ \mu}u_{fe}^{\ \lambda}\gamma_5\gamma_{\nu}T_{bcd\lambda}$		16	$i\bar{T}^{abc\mu}f_{+}^{de}u^{\nu}u_{ed}^{\lambda}\gamma_{5}\gamma_{\nu}T_{abc\lambda}$ + H.c.		45
$\bar{T}^{abc\mu}u_a{}^{d\nu}u^{ef}{}_{\nu}u_{fe}{}^{\lambda}\gamma_5\gamma_{\lambda}T_{bcd\mu}$		17	$i\bar{T}^{abc\mu}f_{+}^{\ \ \mu}{}^{\mu}u_{ed}^{\ \ \lambda}\gamma_5\gamma_{\lambda}T_{abc\nu}$		46

TABLE IV. Terms in the $\mathcal{O}(p^3)$ meson-decuplet-decuplet and $\pi\Delta\Delta$ chiral Lagrangians, where $O_n^{(N_f,3)}$ is defined in Eqs. (63) and (65).

$\overline{O_n^{(N_f,3)}}$	SU(2)	SU(3)	$O_n^{(N_f,3)}$	SU(2)	SU(3)
$\bar{T}^{abc\mu}u_a{}^{d\nu}u^{ef\lambda}u_{fe\lambda}\gamma_5\gamma_{\nu}T_{bcd\mu}$		18	$i\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_{d}{}^{e\rho}\gamma_{5}\gamma_{\nu}D_{\lambda\rho}T_{bce\mu}+\text{H.c.}$	28	47
$\bar{T}^{abc\mu} u^{de}{}_{\mu} u_e{}^{f\nu} u_{fd}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{abc\lambda}$		19	$i\bar{T}^{abc\mu}f_{s,+\mu}{}^{\nu}u_a{}^{d\lambda}\gamma_5\gamma_{\nu}T_{bcd\lambda}$ + H.c.	29	
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_c{}^{f\rho}\gamma_5\gamma_\nu D_{\lambda\rho}T_{def\mu}$	9	20	$i\bar{T}^{abc\mu}f_{s,+\mu}^{\ \nu}u_a^{\ d\lambda}\gamma_5\gamma_{\lambda}T_{bcd\nu}$	30	
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^{f\rho}\gamma_5\gamma_\nu D_{\lambda\rho}T_{cef\mu} + \text{H.c.}$	10	21	$i \bar{T}^{abc\mu} \nabla^{\nu} f_{+a} {}^{d}{}^{\lambda} D_{\lambda} T_{bcd\mu}$	31	48
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^{f\rho}\gamma_5\gamma_\lambda D_{\nu\rho}T_{cef\mu}$	11	22	$i \bar{T}^{abc\mu} \nabla^{\nu} f_{s,+ u}{}^{\lambda} D_{\lambda} T_{abc\mu}$	32	
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}u_e{}^{f\rho}\gamma_5\gamma_\nu D_{\lambda\rho}T_{bcf\mu} + \text{H.c.}$		23	$\bar{T}^{abc\mu}u_a{}^{d u}\chi_{+b}{}^e\gamma_5\gamma_{\nu}T_{cde\mu}$	33	49
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}u_e{}^{f\rho}\gamma_5\gamma_\lambda D_{\nu\rho}T_{bcf\mu}$		24	$\bar{T}^{abc\mu}u_a{}^{d\nu}\chi_{+d}{}^e\gamma_5\gamma_{\nu}T_{bce\mu}$ + H.c.	34	50
$\bar{T}^{abc\mu}u_a{}^{d\nu}u^{ef\lambda}u_{fe}{}^{\rho}\gamma_5\gamma_{\nu}D_{\lambda\rho}T_{bcdu}$		25	$\bar{T}^{abc\mu} u^{de\nu} \chi_{+ed} \gamma_5 \gamma_{\nu} T_{abc\mu}$		51
$\bar{T}^{abc\mu}u_a{}^{d\nu}u^{ef\lambda}u_{fe}{}^{\rho}\gamma_5\gamma_{\lambda}D_{\nu\rho}T_{bcd\mu}$		26	$\bar{T}^{abc\mu}u_a{}^{d u}\chi_{+,s}\gamma_5\gamma_{\nu}T_{bcd\mu}$	35	52
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}f_{-b}{}^{e\nu\lambda}D_{\nu}T_{cde\lambda} + \text{H.c.}$	12	27	$i\bar{T}^{abc\mu}u_a{}^{d\nu}\chi_{-d}{}^eD_{\nu}T_{bce\mu}$ + H.c.	36	53
$\bar{T}^{abc\mu}u_a{}^{d\nu}f_{-b}{}^e{}_{\mu}{}^{\lambda}D_{\nu}T_{cde\lambda}$	13	28	$i\bar{T}^{abc\mu} abla^{ u}\chi_{-a}{}^{d}\gamma_{5}\gamma_{ u}T_{bcd\mu}$	37	54
$\bar{T}^{abc\mu}u_a{}^d{}_\mu f_{-d}{}^{e\nu\lambda}D_\nu T_{bce\lambda} + \text{H.c.}$	14	29	$i\bar{T}^{abc\mu}\nabla^{\nu}\chi_{-,s}\gamma_{5}\gamma_{\nu}T_{abc\mu}$	38	55

TABLE V. Terms in the $\mathcal{O}(p^4)$ meson-decuplet-decuplet and $\pi\Delta\Delta$ chiral Lagrangians, where $O_n^{(N_f,4)}$ is defined in Eqs. (63) and (65).

$\overline{O_n^{(N_f,4)}}$	SU(2)	SU(3)	$O_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_c{}^f{}_\nu u_d{}^{g\lambda}T_{efa\lambda}$	1	1	$\bar{T}^{abc\mu}h^{de u\lambda}h_{ed}{}^{ ho\sigma}D_{\nu\lambda ho\sigma}T_{abc\mu}$		299
$\bar{T}^{abc\mu}u_a{}^d{}_uu_b{}^{e\nu}u_c{}^f{}_{\nu}u_e{}^{g\lambda}T_{dfg\lambda}$ + H.c.	2	2	$i\bar{T}^{abc\mu}h_a{}^d{}_^\nu h_d{}^{e\lambda\rho}\sigma_{\nu\lambda}T_{bce\rho}$	122	300
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_c{}^{f\lambda}u_e{}^g{}_\nu T_{dfg\lambda}$	3	3	$\bar{T}^{abc\mu}u_a{}^d_\mu\nabla^\nu f_{-b}{}^e_^\lambda T_{cde\lambda} + \text{H.c.}$	123	301
$\bar{T}^{abc\mu}u_a{}^d_{\mu}u_b{}^{e\nu}u_c{}^{f\lambda}u_e{}^g_{\lambda}T_{dfq\nu}$ + H.c.	4	4	$\bar{T}^{abc\mu}u_a{}^{d u} abla^\lambda f_{-b}{}^e{}_{\nu\lambda}T_{cde\mu}$	124	302
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_d{}^f{}_\nu u_e{}^{g\lambda}T_{cfg\lambda}$	5	5	$\bar{T}^{abc\mu}u_a{}^d{}_\mu\nabla^\nu f_{-d}{}^e{}_^\lambda T_{bce\lambda} + \text{H.c.}$	125	303
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_d{}^{f\lambda}u_e{}^g{}_{\nu}T_{cfg\lambda}$		6	$\bar{T}^{abc\mu}u_a{}^{d u} abla^\lambda f_{-d}{}^e_{\ \mu\lambda}T_{bce u} + \mathrm{H.c.}$	126	304
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_d{}^f{}_\nu u_f{}^{g\lambda}T_{ceg\lambda}$		7	$\bar{T}^{abc\mu}u_a{}^{d u} abla^\lambda f_{-d}{}^e{}_{\nu\lambda}T_{bce\mu} + \text{H.c.}$	127	305
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_d{}^{f\lambda}u_e{}^g{}_{\lambda}T_{cfg\nu} + \text{H.c.}$	6	8	$\bar{T}^{abc\mu} u^{de}{}_{\mu} \nabla^{\nu} f_{-ed\nu}{}^{\lambda} T_{abc\lambda} + \text{H.c.}$		306
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_d{}^{f\lambda}u_f{}^g{}_{\nu}T_{ceg\lambda} + \text{H.c.}$		9	$\bar{T}^{abc\mu} u^{de u} \nabla^{\lambda} f_{-ed u\lambda} T_{abc\mu}$		307
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_e{}^f{}_{\nu}u_f{}^{g\lambda}T_{cdg\lambda} + \text{H.c.}$		10	$\bar{T}^{abc\mu}u_a{}^{d u} abla^\lambda f_{-b}{}^e{}_^ ho D_{ u ho}T_{cde\mu}$	128	308
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_e{}^{f\lambda}u_f{}^g{}_{\nu}T_{cdg\lambda} + \text{H.c.}$		11	$\bar{T}^{abc\mu}u_a{}^{d u} abla^{\lambda}f_{-d}{}^{e}{}_{\lambda}{}^{ ho}D_{ u ho}T_{bce\mu}+\mathrm{H.c.}$	129	309
$\bar{T}^{abc\mu}_{a}u_{a}{}^{d}_{\mu}u_{b}{}^{e\nu}u_{e}{}^{f\lambda}u_{f}{}^{g}_{\lambda}T_{cdg\nu} + \text{H.c.}$		12	$\bar{T}^{abc\mu} u^{de\nu} \nabla^{\lambda} f_{-ed\lambda}{}^{\rho} D_{\nu\rho} T_{abc\mu}$		310
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u^{fg}{}_{\nu}u_{gf}{}^{\lambda}T_{cde\lambda} + \text{H.c.}$		13	$i\overline{T}^{abc\mu}f_{+a}{}^d_{\mu}{}^{\nu}u_b{}^e{}_{\nu}u_c{}^{f\lambda}T_{def\lambda}$ + H.c.	130	311
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_c{}^{f\lambda}u_f{}^g{}_{\mu}T_{deg\lambda}$	7	14	$i \overline{T}^{abc\mu} f_{+a}{}^d{}_^ u {}_b{}^e{}_ u {}_d{}^{f\lambda} T_{cef\lambda} + \text{H.c.}$	131	312
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u^{fg\lambda}u_{gf\lambda}T_{cde\nu}$		15	$i \overline{T}^{abc\mu} f_{+a}{}^d_{\mu}{}^{\nu} u_b{}^e{}_{\nu} u_e{}^{f\lambda} T_{cdf\lambda} + \text{H.c.}$	132	313
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_c{}^{f\lambda}u_d{}^g{}_{\lambda}T_{efg\mu}$	8	16	$i \bar{T}^{abc\mu} f_{+a}{}^d_^ u_b{}^{e\lambda} u_c{}^f{}_\lambda T_{def u}$	133	314
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_c{}^{f\lambda}u_f{}^g{}_{\lambda}T_{deg\mu}$	9	17	$i \overline{T}^{abc\mu} f_{+a}{}^d_{\mu}{}^{\nu} u_b{}^{e\lambda} u_d{}^f_{\nu} T_{cef\lambda} + \text{H.c.}$	134	315
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_d{}^{f\lambda}u_f{}^g{}_{\mu}T_{ceg\lambda}$ + H.c.		18	$i\bar{T}^{abc\mu}f_{+a}{}^{d}_{\mu}{}^{\nu}u_{b}{}^{e\lambda}u_{d}{}^{f}{}_{\lambda}T_{cef\nu}$ + H.c.	135	316
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_d{}^{e\nu}u_e{}^f{}_\nu u_f{}^{g\lambda}T_{bcq\lambda}$		19	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}_{\mu}{}^{\nu}u_{b}{}^{e\lambda}u_{e}{}^{f}{}_{\nu}T_{cdf\lambda}$ + H.c.	136	317
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_d{}^{f\lambda}u_e{}^g{}_{\lambda}T_{cfq\mu}$	10	20	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}^{\nu}u_{b}{}^{e\lambda}u_{e}{}^{f}{}_{\lambda}T_{cdf\nu}$	137	318
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^f{}_{\mu}u_e{}^g{}_{\nu}T_{cfg\lambda}$	11	21	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}_{\mu}{}^{\nu}u_{d}{}^{e}{}_{\nu}u_{e}{}^{f\lambda}T_{bcf\lambda}$ + H.c.		319
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_d{}^{f\lambda}u_f{}^g{}_{\lambda}T_{ceg\mu}$ + H.c.		22	$i\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_{b}{}^{e}{}_{\mu}u_{d}{}^{f}{}_{\nu}T_{cef\lambda}$ + H.c.	138	320
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_d{}^{e\nu}u_e{}^{f\lambda}u_f{}^g{}_{\nu}T_{bcg\lambda} + \text{H.c.}$		23	$i\overline{T}^{abc\mu}f_{+a}{}^{d}{}_{\mu}{}^{\nu}u_{d}{}^{e\lambda}u_{e}{}^{f}{}_{\nu}T_{bcf\lambda}$ + H.c.		321
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^f{}_{\mu}u_e{}^g{}_{\lambda}T_{cfg\nu}$		24	$i\bar{T}^{abc\mu}f_{+a}{}^{d}_{\mu}{}^{\nu}u_{d}{}^{e\lambda}u_{e}{}^{f}{}_{\lambda}T_{bcf\nu}$ + H.c.		322
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_d{}^{e\nu}u_e{}^{f\lambda}u_f{}^g{}_\lambda T_{bcq\nu} + \text{H.c.}$		25	$i\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_{b}{}^{e}{}_{\nu}u_{d}{}^{f}{}_{\mu}T_{cef\lambda}$ + H.c.	139	323
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u^{fg}{}_{\mu}u_{gf}{}^{\lambda}T_{cde\lambda}$		26	$i\overline{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_{b}{}^{e}{}_{\nu}u_{d}{}^{f}{}_{\lambda}T_{cef\mu}$ + H.c.	140	324
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^{f}{}_{\nu}u_e{}^{g}{}_{\lambda}T_{cfg\mu}$	12	27	$i\overline{T}^{abc\mu}f_{+a}{}^{d}{}_{\mu}{}^{\nu}u^{ef}{}_{\nu}u_{fe}{}^{\lambda}T_{bcd\lambda}$ + H.c.		325
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^f{}_{\lambda}u_e{}^g{}_{\nu}T_{cfg\mu}$		28	$i\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_{b}{}^{e}{}_{\nu}u_{e}{}^{f}{}_{\lambda}T_{cdf\mu}$	141	326
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^f{}_{\lambda}u_f{}^g{}_{\mu}T_{ceg\nu}$		29	$i\overline{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_{d}{}^{e}{}_{\mu}u_{e}{}^{f}{}_{\nu}T_{bcf\lambda}$ + H.c.		327
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^{f}{}_{\lambda}u_f{}^{g}{}_{\nu}T_{ceg\mu}$		30	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}^{\nu}{}^{\nu}u^{ef\lambda}u_{fe\lambda}T_{bcd\nu}$		328

TABLE V. (Continued)

$\overline{O_n^{(N_f,4)}}$	SU(2)	SU(3)	$O_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u^{fg\lambda}u_{af\lambda}T_{cde\mu}$		31	$i\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_{d}{}^{e}{}_{\nu}u_{e}{}^{f}{}_{\mu}T_{bcf\lambda}$ + H.c.		329
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e_{\mu}u_e{}^{f\lambda}u_f{}^g_{\nu}T_{bcq\lambda}$		32	$i\bar{T}^{abc\mu}f_{+a}^{\ \ d\nu\lambda}u_d^{\ \ e}{}_{\nu}u_e^{\ \ f}{}_{\lambda}T_{bcf\mu}$ + H.c.		330
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e_{\mu}u_e{}^{f\lambda}u_f{}^g_{\lambda}T_{bcg\nu}$ + H.c.		33	$i\bar{T}^{abc\mu}f_+{}^{de}{}^{\nu}{}^{\nu}u_{ad\nu}u_e{}^{f\lambda}T_{bcf\lambda}+\mathrm{H.c.}$		331
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e_{\mu}u^{fg}_{\nu}u_{gf}{}^{\lambda}T_{bce\lambda} + \text{H.c.}$		34	$i\bar{T}^{abc\mu}f_{+}^{de}{}^{\nu}_{\mu}u_{ad}{}^{\lambda}u_{e}{}^{f}{}_{\nu}T_{bcf\lambda}$ + H.c.		332
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u^{fg}{}_{\nu}u_{gf\lambda}T_{cde\mu}$		35	$i\bar{T}^{abc\mu}f_{+}^{de}{}^{\nu}_{\mu}u_{ad}{}^{\lambda}u_{e}{}^{f}{}_{\lambda}T_{bcf\nu}$		333
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e_{\nu}u^{fg}_{\mu}u_{gf}{}^{\lambda}T_{bce\lambda}$		36	$i\bar{T}^{abc\mu}f_{+}^{de_{\mu}^{}\nu}u_{a}^{f}{}_{\nu}u_{ed}^{\lambda}T_{bcf\lambda}$ + H.c.		334
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e_{\ \mu}u^{fg\lambda}u_{gf\lambda}T_{bce\nu}$		37	$i\bar{T}^{abc\mu}f_{+}^{de_{\mu}\nu}u_{a}^{f\lambda}u_{ed\nu}T_{bcf\lambda}$ + H.c.		335
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e_{\nu}u_e{}^{f\lambda}u_f{}^g_{\lambda}T_{bcq\mu}$		38	$i\bar{T}^{abc\mu}f_{+}^{de}{}^{\nu}_{\mu}u_{a}{}^{f\lambda}u_{ed\lambda}T_{bcf\nu}$		336
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}u_e{}^f{}_{\nu}u_f{}^g{}_{\lambda}T_{bcg\mu}$		39	$i\bar{T}^{abc\mu}f_{+}^{de u\lambda}u_{ad u}u_{e}^{f}{}_{\lambda}T_{bcf\mu}$		337
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\nu}u^{fg\lambda}u_{gf\lambda}T_{bce\mu}$		40	$i\bar{T}^{abc\mu}f_+{}^{de}{}^{\nu}{}^{\nu}u_e{}^{f}{}_{\nu}u_{fd}{}^{\lambda}T_{abc\lambda}+\mathrm{H.c.}$		338
$\bar{T}^{abc\mu}u_a{}^{d\nu}u^{ef}_{\ \mu}u_f{}^{g}_{\ \nu}u_{ge}{}^{\lambda}T_{bcd\lambda}$		41	$i\bar{T}^{abc\mu}f_{+}^{de u\lambda}u_{e}^{f}{}_{\nu}u_{fd\lambda}T_{abc\mu}$		339
$\bar{T}^{abc\mu} u^{de}{}_{\mu} u_{ed}{}^{\nu} u^{fg}{}_{\nu} u_{gf}{}^{\lambda} T_{abc\lambda}$		42	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}_{\mu}{}^{\nu}u_{b}{}^{e\lambda}u_{c}{}^{f\rho}D_{\nu\lambda}T_{def\rho} + \text{H.c.}$	142	340
$\bar{T}^{abc\mu} u^{de}{}_{\mu} u_{ed}{}^{\nu} u^{fg\lambda} u_{gf\lambda} T_{abc\nu}$		43	$i \bar{T}^{abc\mu} f_{+a}{}^{d}_{\mu}{}^{\nu} u_b{}^{e\lambda} u_c{}^{f ho} D_{\lambda ho} T_{def u}$	143	341
$\bar{T}^{abc\mu} u^{de\nu} u_{ed\nu} u^{fg\lambda} u_{gf\lambda} T_{abc\mu}$		44	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}_{\mu}{}^{\nu}u_{b}{}^{e\lambda}u_{d}{}^{f\rho}D_{\nu\lambda}T_{cef\rho}$ + H.c.	144	342
$\bar{T}^{abc\mu} u^{de\nu} u_{ed}^{\ \ \lambda} u^{fg}_{\ \nu} u_{gf\lambda} T_{abc\mu}$		45	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}^{\nu}u_{b}{}^{e\lambda}u_{d}{}^{f\rho}D_{\nu\rho}T_{cef\lambda}$ + H.c.	145	343
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_c{}^{f\lambda}u_d{}^{g\rho}D_{\nu\lambda}T_{efg\rho}$	13	46	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}^{\nu}u_{b}{}^{e\lambda}u_{d}{}^{f\rho}D_{\lambda\rho}T_{cef\nu}$ + H.c.	146	344
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_c{}^{f\lambda}u_d{}^{g\rho}D_{\nu\rho}T_{efg\lambda}$ + H.c.	14	47	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}_{\mu}{}^{\nu}u_{b}{}^{e\lambda}u_{e}{}^{f\rho}D_{\nu\lambda}T_{cdf\rho}$ + H.c.	147	345
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_c{}^{f\lambda}u_e{}^{g\rho}D_{\nu\rho}T_{dfg\lambda}$	15	48	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}_{\mu}{}^{\nu}u_{b}{}^{e\lambda}u_{e}{}^{f\rho}D_{\nu\rho}T_{cdf\lambda}$ + H.c.	148	346
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_c{}^{f\lambda}u_e{}^{g\rho}D_{\lambda\rho}T_{dfg\nu} + \text{H.c.}$	16	49	$i\bar{T}^{abc\mu}f_{+a}{}^{d}{}_{\mu}{}^{\nu}u_{b}{}^{e\lambda}u_{e}{}^{f ho}D_{\lambda ho}T_{cdf u}$	149	347
$\bar{T}^{abc\mu}u_a{}^d_{\mu}u_b{}^{e\nu}u_d{}^{f\lambda}u_e{}^{g\rho}D_{\nu\lambda}T_{cfg\rho}$	17	50	$i \overline{T}^{abc\mu} f_{+a}{}^{d}{}^{\nu} u_d{}^{e\lambda} u_e{}^{f ho} D_{\nu\lambda} T_{bcf ho} + \mathrm{H.c.}$		348
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_d{}^{f\lambda}u_e{}^{g\rho}D_{\nu\rho}T_{cfg\lambda}$		51	$i \overline{T}^{abc\mu} f_{+a}{}^{d}{}^{\nu} u_d{}^{e\lambda} u_e{}^{f ho} D_{\nu ho} T_{bcf\lambda} + \text{H.c.}$		349
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_d{}^{f\lambda}u_e{}^{g\rho}D_{\lambda\rho}T_{cfg\nu}$ + H.c.	18	52	$i \overline{T}^{abc\mu} f_{+a}{}^{d}{}^{\nu} u_d{}^{e\lambda} u_e{}^{f ho} D_{\lambda ho} T_{bcf u} + \mathrm{H.c.}$		350
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_d{}^{f\lambda}u_f{}^{g\rho}D_{\nu\lambda}T_{ceg\rho}$		53	$i \overline{T}^{abc\mu} f_{+a}{}^{d\nu\lambda} u_b{}^e{}_\mu u_d{}^{f\rho} D_{\nu\rho} T_{cef\lambda} + \text{H.c.}$	150	351
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_d{}^{f\lambda}u_f{}^{g\rho}D_{\nu\rho}T_{ceg\lambda} + \text{H.c.}$		54	$i\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_b{}^e{}_{\nu}u_d{}^{f\rho}D_{\lambda\rho}T_{cef\mu}$ + H.c.	151	352
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u_d{}^{f\lambda}u_f{}^{g\rho}D_{\lambda\rho}T_{ceg\nu} + \text{H.c.}$		55	$i \overline{T}^{abc\mu} f_{+a}{}^{d\nu\lambda} u_b{}^e{}_{\nu} u_e{}^{f ho} D_{\lambda ho} T_{cdf\mu} + \text{H.c.}$	152	353
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_e{}^{f\lambda}u_f{}^{g\rho}D_{\nu\rho}T_{cdg\lambda} + \text{H.c.}$		56	$i\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_{b}{}^{e ho}u_{d}{}^{f}{}_{\mu}D_{ u ho}T_{cef\lambda}$ + H.c.	153	354
$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_b{}^{e\nu}u_e{}^{f\lambda}u_f{}^{g\rho}D_{\lambda\rho}T_{cdg\nu} + \text{H.c.}$		57	$i\bar{T}^{abc\mu}f_{+a}{}^d_{\mu}{}^{\nu}u^{ef\lambda}u_{fe}{}^{ ho}D_{\nu\lambda}T_{bcd ho} + \mathrm{H.c.}$		355
$\overline{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u^{fg\lambda}u_{gf}{}^ ho D_{\nu\lambda}T_{cde ho} + \text{H.c.}$		58	$i \bar{T}^{abc\mu} f_{+a}{}^d{}_^ u u^{ef\lambda} u_{fe}{}^ ho D_{\lambda ho} T_{bcd u}$		356
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}u^{fg\lambda}u_{gf}{}^\rho D_{\lambda\rho}T_{cde\nu}$		59	$i\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}u_b{}^{e\rho}u_d{}^f{}_{\nu}D_{\lambda\rho}T_{cef\mu}$ + H.c.	154	357
$T^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_c{}^{f\lambda}u_d{}^{g\rho}D_{\lambda\rho}T_{efg\mu} + \text{H.c.}$	19	60	$iT^{abc\mu}f_{+a}{}^{d\nu\lambda}u_d{}^e_{\ \mu}u_e{}^{f\rho}D_{\nu\rho}T_{bcf\lambda}$ + H.c.		358
$T^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}u_c{}^{f\lambda}u_f{}^{g\rho}D_{\lambda\rho}T_{deg\mu}$	20	61	$iT^{abc\mu}f_{+a}{}^{d\nu\lambda}u_{d}{}^{e}{}_{\nu}u_{e}{}^{f\rho}D_{\lambda\rho}T_{bcf\mu}$ + H.c.		359
$\overline{T}^{abc\mu}_{a} u_a{}^d_{\mu} u_d{}^{e\nu} u_e{}^{f\lambda} u_f{}^{g\rho} D_{\nu\lambda} T_{bcg\rho}$		62	$iT^{abc\mu}f_{+a}{}^{d\nu\lambda}u_d{}^{e\rho}u_e{}^{f}{}_{\mu}D_{\nu\rho}T_{bcf\lambda}$ + H.c.		360
$T^{abc\mu}_{a} u_a{}^d_{\mu} u_d{}^{e\nu} u_e{}^{f\lambda} u_f{}^{g\rho} D_{\nu\rho} T_{bcg\lambda} + \text{H.c.}$		63	$iT^{abc\mu}f_{+a}{}^{d\nu\lambda}u_d{}^{e\rho}u_e{}^{f}{}_{\nu}D_{\lambda\rho}T_{bcf\mu}$ + H.c.		361
$T^{abc\mu}_{a} u_a^{a}{}_{\mu} u_d^{e\nu} u_e{}^{f\lambda} u_f{}^{g\rho} D_{\lambda\rho} T_{bcg\nu} + \text{H.c.}$		64	$iT^{abc\mu}f_{+}^{ae}\mu^{\nu}u_{ad}^{\lambda}u_{e}^{J\rho}D_{\nu\lambda}T_{bcf\rho}$ + H.c.		362
$T^{abc\mu}_{a} u_{a}^{a\nu} u_{b}^{e}{}_{\nu} u_{d}^{f\lambda} u_{e}^{g\rho} D_{\lambda\rho} T_{cfg\mu} + \text{H.c.}$	21	65	$iT^{abc\mu}f_{+}^{ae}\mu^{\nu}u_{ad}^{\lambda}u_{e}^{J\rho}D_{\nu\rho}T_{bcf\lambda}$ + H.c.		363
$T^{abc\mu}u_a{}^{a\nu}u_b{}^{e}{}_{\nu}u_d{}^{J\lambda}u_f{}^{g\rho}D_{\lambda\rho}T_{ceg\mu} + \text{H.c.}$		66	$iT^{abc\mu}f_{+}^{ae}\mu^{\nu}u_{ad}^{\lambda}u_{e}^{J\rho}D_{\lambda\rho}T_{bcf\nu}$		364
$T^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^{f}_{\mu}u_e{}^{g\rho}D_{\nu\rho}T_{cfg\lambda}$	22	67	$iT^{abc\mu}f_+ \overset{de}{}_{\mu}{}^{\nu}u_a{}^{f\lambda}u_{ed}{}^{\rho}D_{\nu\lambda}T_{bcf\rho} + \text{H.c.}$		365
$T^{abc\mu}_{a} u_{a}^{a\nu} u_{b}^{e\lambda} u_{d}^{J}_{\mu} u_{e}^{g\rho} D_{\lambda\rho} T_{cfg\nu}$	23	68	$iT^{abc\mu}f_+ \overset{ae}{}_{\mu}{}^{\nu}u_a{}^{J\lambda}u_{ed}{}^{\rho}D_{\nu\rho}T_{bcf\lambda} + \text{H.c.}$		366
$T^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^{f}_{\mu}u_f{}^{g\rho}D_{\lambda\rho}T_{ceg\nu} + \text{H.c.}$		69	$iT^{abc\mu}f_{+}de_{\mu}^{\nu}u_{a}^{f\lambda}u_{ed}^{\rho}D_{\lambda\rho}T_{bcf\nu}$		367
$T^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_c{}^{j\rho}u_d{}^{g}{}_{\mu}D_{\lambda\rho}T_{efg\nu}$		70	$iT^{abc\mu}f_+^{de\nu\lambda}u_{ad\nu}u_e^{f\rho}D_{\lambda\rho}T_{bcf\mu}$ + H.c.		368
$T^{abc\mu}u_a{}^{a\nu}u_b{}^{e\lambda}u_c{}^{J\rho}u_d{}^{g}{}_{\nu}D_{\lambda\rho}T_{efg\mu}$	24	71	$iT^{abc\mu}f_{+}\overset{ae}{}_{\mu}\overset{\nu}{}_{\nu}u_{e}^{J\lambda}u_{fd}^{\rho}D_{\nu\lambda}T_{abc\rho}$ + H.c.		369
$T^{abc\mu}_{a} u_{a}^{a\nu} u_{b}^{e\lambda} u_{d}^{J}{}_{\nu} u_{e}^{g\rho} D_{\lambda\rho} T_{cfg\mu}$	25	72	$iT^{abc\mu}f_+^{ae\nu\lambda}u_e^J{}_\nu u_{fd}{}^\rho D_{\lambda\rho}T_{abc\mu}$ + H.c.		370
$T^{a\nu\nu\mu}u_a^{a\nu}u_b^{e\lambda}u_d^{\prime}{}_{\nu}u_f^{g\rho}D_{\lambda\rho}T_{ceg\mu} + \text{H.c.}$		13	$T^{\mu\nu\rho\mu}f_{+a}{}^{\mu}{}^{\nu}u_{b}{}^{e\kappa}u_{c}{}^{J\rho}\sigma_{\nu\lambda}T_{def\rho}$ + H.c.	155	371
$T^{\mu\nu\mu}u_{a}^{\mu\nu}u_{b}^{\nu\mu}u_{d}^{\prime}{}_{\lambda}u_{e}^{g\mu}D_{\nu\rho}T_{cfg\mu}$		74	$T^{a\nu c\mu}f_{+a}{}^{\mu}{}^{\nu}u_{b}{}^{e\kappa}u_{d}{}^{\prime\rho}\sigma_{\nu\lambda}T_{cef\rho} + \text{H.c.}$	156	372
$T^{\mu\nu\nu\mu}u_{a}^{\mu\nu}u_{b}^{\nu}v_{\nu}^{J}y^{\mu}u_{gf}^{\rho}D_{\lambda\rho}T_{cde\mu}$		15	$T^{\mu\nu\mu}f_{+a}{}^{\mu}{}^{\nu}u_{b}{}^{e\kappa}u_{d}{}^{\prime\rho}\sigma_{\nu\rho}T_{cef\lambda} + \text{H.c.}$	157	373
$T^{\mu\nu\nu\mu}u_a^{\mu\nu}u_b^{e\lambda}u_d^{\prime}{}_{\lambda}u_f^{g\rho}D_{\nu\rho}T_{ceg\mu}$		/6	$T^{\mu\nu\mu}f_{+a}{}^{\mu}{}^{\nu}u_{b}{}^{e\kappa}u_{e}{}^{j\rho}\sigma_{\nu\lambda}T_{cdf\rho} + \text{H.c.}$	158	574
$T^{a\nu\nu\mu}u_a{}^{a\nu}u_b{}^{e\nu}u_d{}^{\prime\rho}u_f{}^g{}_{\mu}D_{\lambda\rho}T_{ceg\nu}$		11	$T^{a\nu c\mu}f_{+a}{}^{a}{}_{\mu}{}^{\nu}u_{b}{}^{e\lambda}u_{e}{}^{j\rho}\sigma_{\nu\rho}T_{cdf\lambda}$ + H.c.	159	315

$O_n^{(N_f,4)}$	SU(2)	SU(3)	$O_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^{f\rho}u_f{}^g{}_\nu D_{\lambda\rho}T_{ceau}$		78	$i\bar{T}^{abc\mu}f_{s,+\mu}{}^{\nu}u_{a}{}^{d}{}_{\nu}u_{b}{}^{e\lambda}T_{cde\lambda}+\text{H.c.}$	160	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e}{}_{\mu}u_e^{\ f\lambda}u_f^{\ g\rho}D_{\nu\rho}T_{bca\lambda}$		79	$i\bar{T}^{abc\mu}f_{s,+\mu}^{\nu}u_a^{d\lambda}u_b^{e}\lambda^T_{cde\nu}$	161	
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\mu}u_e{}^{f\lambda}u_f{}^{g\rho}D_{\lambda\rho}T_{bca\nu}$ + H.c.		80	$i\bar{T}^{abc\mu}f_{s,+\mu}{}^{\nu}u_{a}{}^{d}{}_{\nu}u_{d}{}^{e\lambda}T_{bce\lambda}$ + H.c.	162	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_b^{\ e\lambda}u^{fg}_{\ \mu}u_{af}^{\ \rho}D_{\nu\lambda}T_{cde\rho}$		81	$i\bar{T}^{abc\mu}f_{s,+\mu}^{\nu}u_a^{d\lambda}u_d^e T_{bce\lambda} + \text{H.c.}$	163	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_b^{\ e\lambda}u_f^{\ g}{}_{\nu}u_{af}^{\ \rho}D_{\lambda\rho}T_{cde\mu}$		82	$i\bar{T}^{abc\mu}f_{s,+\mu}^{\nu}u_a^{\ d\lambda}u_d^{\ e}\lambda T_{bce\nu}$	164	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e}{}_{\mu}u_f^{\ g\lambda}u_{af}^{\ \rho}D_{\nu\lambda}T_{bcea} + \text{H.c.}$		83	$i\bar{T}^{abc\mu}f_{s}^{\mu\nu\lambda}u_{a}^{d}u_{a}^{d}u_{a}^{e}T_{bce\mu}$	165	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e}u_a^{fg\lambda}u_{af}^{\ \rho}D_{\lambda a}T_{bce\nu}$		84	$i\bar{T}^{abc\mu}f_{s+\mu}^{\nu}u_a^{\ d\lambda}u_b^{\ e\rho}D_{\nu\lambda}T_{cdea} + \text{H.c.}$	166	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_e^{\ \mu}u_e^{f\lambda}u_f^{g\rho}D_{\lambda a}T_{bca\mu} + \text{H.c.}$		85	$i\bar{T}^{abc\mu}f_{s+\mu}^{\nu}u_{a}^{d\lambda}u_{b}^{e\rho}D_{\lambda a}T_{cde\mu}$	167	
$\bar{T}^{abc\mu} u_a^{\ d\nu} u_d^{\ e\lambda} u_e^{\ f} u_f^{\ g\rho} D_{\nu a} T_{bcal}$		86	$i\bar{T}^{abc\mu}f_{s+\mu}^{\nu}u_{a}^{d\lambda}u_{d}^{e\rho}D_{\nu\lambda}T_{bcea} + \text{H.c.}$	168	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_b^{\ e\lambda}u_f^{\ g\rho}u_{afa}D_{\nu\lambda}T_{cde\mu}$		87	$i\bar{T}^{abc\mu}f_{s+\mu}^{\nu}u_a^{\ d\lambda}u_d^{\ e\rho}D_{\mu\sigma}T_{bce\lambda} + \text{H.c.}$	169	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e}{}_{\nu}u^{fg\lambda}u_{af}^{\ \rho}D_{\lambda a}T_{bce\mu}$		88	$i\bar{T}^{abc\mu}f_{s+\mu}^{\nu}u_{a}^{d\lambda}u_{d}^{e\rho}D_{\lambda a}T_{bce\mu}$	170	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e\lambda}u_e^{\ f}{}_{\mu}u_f^{\ g\rho}D_{\lambda a}T_{bca\mu} + \text{H.c.}$		89	$i\bar{T}^{abc\mu}f_{s}^{\ \nu\lambda}u_{a}^{\ d}u_{a}^{\ e\rho}D_{\lambda a}T_{bce\mu} + \text{H.c.}$	171	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e\lambda}u_e^{\ f}{}_{\lambda}u_f^{\ g\rho}D_{\nu\rho}T_{bco\mu}$		90	$\bar{T}^{abc\mu}f_{s+\mu}^{\ \nu}u_a^{\ d\lambda}u_b^{\ e\rho}\sigma_{\nu\lambda}T_{cdeo}^{\ H.c.}$	172	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u^{ef}_{\ \mu}u_f^{\ g\lambda}u_{ae}^{\ \rho}D_{\nu\lambda}T_{bcd\rho}$		91	$\bar{T}^{abc\mu}f_{s,+\mu}^{\ \nu}u_a^{\ d\lambda}u_d^{\ e\rho}\sigma_{\nu\lambda}T_{bce\rho} + \text{H.c.}$	173	
$\bar{T}^{abc\mu} u^{de}{}_{\mu} u_{ed}{}^{\nu} u^{fg\lambda} u_{af}{}^{\rho} D_{\nu\lambda} T_{abco}$		92	$\bar{T}^{abc\mu}f_{s,+\mu}^{\ \nu}u_a^{\ d\lambda}u_d^{\ e\rho}\sigma_{\nu\rho}T_{bce\lambda} + \text{H.c.}$	174	
$\bar{T}^{abc\mu} u^{de}{}_{\mu} u_{ed}{}^{\nu} u^{fg\lambda} u_{af}{}^{\rho} D_{\lambda\rho} T_{abc\nu}$		93	$\bar{T}^{abc\mu}f_{+a}^{\ \mu}{}^{\mu}u_{d}{}^{e\lambda}u_{e}{}^{f\rho}\sigma_{\nu\lambda}T_{bcf\rho} + \text{H.c.}$		376
$\bar{T}^{abc\mu} u^{de\nu} u_{ed\nu} u^{fg\lambda} u_{af}{}^{\rho} D_{\lambda o} T_{abc\mu}$		94	$\bar{T}^{abc\mu}f_{\pm a}^{\ \mu} u_{\mu}^{\ e\lambda} u_{e}^{\ f\rho}\sigma_{\nu a}T_{bcf\lambda} + \text{H.c.}$		377
$\bar{T}^{abc\mu} u^{de\nu} u_{ad}^{\lambda} u^{fg}{}_{\mu} u_{af}{}^{\rho} D_{\lambda o} T_{abc\mu}$		95	$\bar{T}^{abc\mu}f_{\pm a}^{\ \ \nu}u^{ef\lambda}u_{fe}^{\ \rho}\sigma_{\nu\lambda}T_{bcde} + \text{H.c.}$		378
$\bar{T}^{abc\mu} \mu_a{}^{d\nu} \mu_b{}^{e\lambda} \mu_a{}^{f\rho} \mu_d{}^{g\sigma} D_{\nu \lambda \sigma} T_{afam}$	26	96	$\bar{T}^{abc\mu}f_{\perp}d^{e}_{\nu}\nu_{\mu}d^{\lambda}\mu_{\sigma}f^{\rho}\sigma_{\nu}T_{baf\sigma} + \text{H.c.}$		379
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}u_d{}^{f\rho}u_a{}^{g\sigma}D_{\nu\lambda\sigma}T_{ofor}$	27	97	$\bar{T}^{abc\mu}f^{\ \ \ \nu}_{\ \ \ }u_{ad}^{\ \ \lambda}u_{a}^{\ \ \ \rho}\sigma_{\nu a}T_{bafi}^{\ \ \ \ } + \text{H.c.}$		380
$\bar{T}^{abc\mu}_{\mu} {}^{d\nu}_{\mu} {}^{e\lambda}_{\mu} {}^{f\rho}_{\mu} {}^{g\sigma}_{\sigma} D_{\mu} {}^{\gamma}_{\sigma} T_{\sigma} {}^{\gamma}_{\sigma}$		98	$\bar{T}^{abc\mu}f^{\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $		381
$\bar{T}^{abc\mu}\mu^{d\nu}\mu^{e\lambda}\mu^{fg\mu}\mu^{c\sigma}D$		99	$\bar{T}^{abc\mu}f^{\ de\ \nu\mu}f^{\ b}\mu c_{\mu}^{\ \rho}\sigma_{\mu}T^{\ \mu} + Hc$		382
$\bar{T}^{abc\mu}\mu^{d\nu}\mu^{e\lambda}\mu^{f\rho}\mu^{g\sigma}D$, T_{i}		100	$i\overline{T}^{abc\mu}f$, $d \nu f$, $e^{\lambda\rho}\gamma_{e}\gamma$, $D_{\lambda}T$, $+$ H c	175	383
$\bar{T}^{abc\mu} u^{de\nu} u^{\lambda} u^{fg\mu} u^{\sigma} D , T$		101	$iT_{j+a} \mu J = b \gamma 5 \gamma b \lambda r cae\rho + H.c.$	176	384
T u u_{ed} u u_{gf} $D_{\nu\lambda\rho\sigma}T$ $abc\mu$ T T $bc\mu$ d u $e^{\nu}u$ $f^{\lambda}u$ $g\rho\sigma$ T t t \pm H c	28	102	$T = J + a \mu J - b T 57 \lambda D \nu T cde\rho + 11.0.$	177	385
$T = u_a \mu u_b u_c u_d = \delta_{\nu\rho} T_{efg\lambda} + \Pi.C.$	20	102	$T = J + a = J - b = v \int 5 \int \lambda D \rho^{T} c de\mu$ T = T = b + c = c = c = c = c = c = c = c = c = c	178	386
$i\overline{T}^{abc\mu}\mu d \mu e^{\nu}\mu f^{\lambda}\mu g^{\rho}\sigma T$	30	104	$iT = J + a = J - b = v f f \rho D \lambda^{T} c de\mu$ $i\overline{T}^{abc\mu} f = d = v f = e^{\lambda} \rho_{M-M} D T = + H c$	179	387
\vec{T} $\vec{u}_{a} \mu u_{b} u_{d} u_{e} = \mathcal{O}_{\nu\lambda} \mathbf{I}_{cfg\rho}$ $\vec{T}_{abc\mu\mu} d_{\mu} e^{\nu} \mathbf{\mu}_{b} f_{\lambda\mu} g\rho_{\sigma} \mathbf{T}$	50	105	$T = \int a \mu \int d f = \int b \partial r \partial$	180	388
$\frac{1}{T} \frac{1}{a} \frac{1}{\mu a_{\mu}} \frac{1}{a} \frac{1}{a$		105	$T = J_{+a} \mu J_{-d} + f_{5} \lambda D_{\nu} T_{bce\rho} + \Pi.C.$	181	389
$iT , u_{a \ \mu}u_{b} u_{d} u_{f} \delta_{\nu\rho}T_{ceg\lambda} + \Pi.C.$ $i\overline{T}abcu_{\mu}d_{\mu}e^{\nu}\mu f\lambda\mu e^{i\theta}\sigma T + \mathbf{H}c$		100	$iT f_{+a} = \mu \int_{-d} f_{+} f_{5} f_{\lambda} D_{\rho} T_{bcev} + \Pi.C.$	182	300
$iT^{abcu} u_{a}^{\mu} u_{b}^{\mu} u_{e}^{\mu} u_{f}^{\mu} \delta_{\nu\rho} T_{cdg\lambda} + \Pi.C.$		107	$T_{\mu} = T_{\mu} + T_{\mu$	182	301
$ \begin{array}{c} u_{a \ \mu} u_{b} \\ u_{a \ \mu} u_{b} \\ u_{gf} \\ \delta_{\nu\lambda} \\ c_{de\rho} \\ \tau \\ \mathbf{T} \\ T$	31	100	$J_{+a} = J_{-d} \mu' \gamma_5 \gamma_{\nu} D_{\rho} I_{bce\lambda} + \text{H.C.}$	184	302
$\frac{1}{T} \frac{1}{a} \frac{u_b}{u_b} \frac{u_d}{u_d} \frac{u_e}{\mu} \frac{u_e}{e} \frac{v_{\mu}}{\sigma} \frac{1}{\sigma} \frac{1}$	51	110	$iT = \int_{a} \int_{a} \int_{a} \int_{a} \int_{a} \int_{a} \int_{a} \int_{a} \int_{b} \int_{b} \int_{b} \int_{b} \int_{b} \int_{b} \int_{b} \int_{a} \int_{a}$	185	303
$i\mathbf{T}^{a} = u_{a} \mu u_{d} u_{e}^{a} u_{f}^{a} \partial_{\nu} \partial_{\mu} $		111	$iT J_{+a} J_{-d} \nu' \gamma_5 \gamma_\lambda D_\rho T_{bce\mu} + \Pi.C.$ $i\overline{T}^{abc\mu}f d\nu\lambda f e^{-\rho_{ac}} \alpha D T + H \rho$	186	30/
$iI , u_{a \ \mu}u_{d} u_{e}^{s} u_{f}^{s,s} \delta_{\nu\rho}I_{bcg\lambda} + \Pi.C.$ $;\overline{T}abcu_{\mu} d\nu_{\mu} e \mu f\lambda_{\mu} q\rho T$		112	$iT J_{+a} J_{-d} j' \gamma_5 \gamma_\rho D_\lambda T_{bce\mu} + \Pi.C.$ $i\overline{T}^{abc\mu}f \nu f d\lambda\rho_{ac} \alpha D T + \mathbf{H} \alpha$	187	374
$i\mathbf{T}^{a} u_{d} \mu u_{e}^{a} u_{f}^{a} \partial_{\mu} \rho_{\sigma} \mathbf{T} + \mathbf{H} \rho_{\sigma}$		112	$iI f_{s,+\mu} f_{-a} f_{5\gamma} D_{\lambda} I_{bcd\rho} + \Pi.C.$ $i\overline{T}^{abc\mu} f \nu f d\lambda \rho_{\alpha} \alpha D T + H c$	188	
$iI , u_a u_d \mu u^{s} u_{gf} \delta_{\nu\lambda} I_{bce\rho} + \Pi.C.$ $i\overline{T}^{abcu} u^{de} u \nu u^{fq\lambda} u^{\rho} \sigma T$		113	$iI j_{s,+\mu} j_{-a} \gamma_5 \gamma_\lambda D_\nu I_{bcd\rho} + \Pi.C.$ $i\overline{T}^{abc\mu} f \nu\lambda f d \rho_{ac} \neq D T$	180	
$\bar{T}^{abc\mu}_{\mu} d^{\mu}_{\mu} e^{j} u^{s} u_{gf} \delta_{\nu\lambda} I_{abc\rho}$	32	114	$ \frac{1}{T} \frac{1}{abc\mu f} \frac{1}{bc\mu} \int_{a} \frac{1}{bc} \frac{1}{bc\mu} \frac{1}{bc\mu} \frac{1}{bc\mu} \int_{a} \frac{1}{bc\mu} \frac$	109	
$\overline{T}_{abcuv}^{abcuv} d = \mu u_b \int_{-c}^{c} \gamma \gamma_5 \gamma_\nu D_\lambda I_{def\rho} + \text{H.c.}$	32	115	$ \frac{1}{T_{abcu}} \int_{s,+} \int_{-a} \frac{1}{\nu} \frac{1}{\gamma} \frac{1}{\gamma} \frac{1}{\gamma} \frac{1}{\rho_{abcu}} \frac$	190	305
$\bar{T}^{abc} u_a \mu u_b J_{-c} \gamma \gamma_5 \gamma_\lambda D_\nu I_{def\rho} + \text{H.c.}$	24	117	$T_{1} = \int_{+}^{+} \int_{-ed} \int_$		395
$\overline{T}_{abc\mu}^{abc\mu} u_{a}^{a}{}_{\mu}u_{b}^{b} J_{-d}^{c}{}_{r}\gamma_{5}\gamma_{\nu}D_{\lambda}I_{cef\rho} + \text{H.c.}$	25	117	$II^{abc} J_{+}^{abc} \mu_{\mu}^{abc} J_{-ed}^{abc} \gamma_5 \gamma_{\lambda} D_{\nu} I_{abc\rho} + \text{H.C.}$		207
$\overline{T}_{abc\mu}^{abc\mu} u_{a}^{a}{}_{\mu} u_{b}^{b} J_{-d}^{c}{}_{r}^{\gamma} \gamma_{5} \gamma_{\lambda} D_{\nu} I_{cef\rho} + \text{H.c.}$	26	110	$T_{\mu}^{\mu\nu} J_{\mu}^{\mu\nu} J_{\mu}^{\mu\nu} J_{\mu}^{\mu\nu} \gamma_{5} \gamma_{\lambda} D_{\rho} T_{abc\mu}$		200
$\overline{T}_{abc\mu}^{abc\mu} u_a^{a\mu} u_b^{bb} f_{-d}^{\mu\nu} \gamma_5 \gamma_\lambda D_\rho T_{cef\nu} + \text{H.c.}$	30 27	119	$T_{abc\mu} f_{+}^{abc\mu} f_{-ed\nu} \gamma_{5} \gamma_{\rho} D_{\lambda} I_{abc\mu}$	101	200
$I = u_a u_b u_b J_{-e} J_{\nu} \gamma_5 \gamma_{\nu} D_{\lambda} I_{cdf\rho} + \text{H.c.}$ $\bar{T}abcu d e \nu c f \lambda \rho D T + \text{H.c.}$	31 20	120	$II \stackrel{Dorr}{\longrightarrow} J_{+a} \stackrel{n}{\mu} \stackrel{n}{\longrightarrow} n_b \stackrel{orr}{\longrightarrow} \gamma_5 \gamma_{\nu} D_{\lambda} I_{cde\rho} + \text{H.c.}$	191	399 400
$I^{abcr} u_a^{a}{}_{\mu} u_b^{cr} f_{-e}{}^{frr} \gamma_5 \gamma_{\lambda} D_{\nu} I_{cdf\rho} + \text{H.c.}$	38 20	121	$iI^{acc\mu}f_{+a^{\mu}\mu}n_{b^{cc\mu}\gamma_{5}\gamma_{\lambda}}D_{\nu}I_{cde\rho} + \text{H.c.}$	192	400
$T^{a\nu\nu\mu}u_a{}^a{}_\mu u_b{}^{e\nu}f_{-e}{}^{f\mu}\gamma_5\gamma_\lambda D_\rho T_{cdf\nu} + \text{H.c.}$	39	122	$iT^{abc\mu}f_{+a}d\nu h_b \mu^{\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{cde\rho}$	193	401
$T^{a\nu\nu\mu}u_a^{\ a}{}_{\mu}u_d^{\ e\nu}f_{-b}{}^{\gamma}\gamma_{\nu}\gamma_{\lambda}T_{cef\rho} + \text{H.c.}$	40	123	$iT^{a\nu\nu\mu}f_{+a}d\nu\lambda h_{b}e^{\nu}\gamma_{5}\gamma_{\lambda}D_{\rho}T_{cde\mu}$	194	402
$T^{\mu\nu\nu\mu}u_a^{\ \mu}u_d^{\ e\nu}f_{-b}^{\ \rho}\gamma_5\gamma_\lambda D_\nu T_{cef\rho} + \text{H.c.}$	41	124	$iT^{abc\mu}f_{+a}^{abc\mu}h_{b}^{e}{}_{\nu}^{\rho}\gamma_{5}\gamma_{\rho}D_{\lambda}T_{cde\mu}$	195	403
$T^{a\nu c\mu}u_{a}{}^{a\nu}u_{b}{}^{e\lambda}f_{-c}{}^{J}{}_{\mu}{}^{\rho}\gamma_{5}\gamma_{\nu}D_{\lambda}T_{def\rho}$	42	125	$iT^{abc\mu}f_{+a}{}^{a}{}^{\nu}h_{d}{}^{e\lambda\rho}\gamma_{5}\gamma_{\nu}D_{\lambda}T_{bce\rho} + \text{H.c.}$	196	404

$ \begin{split} \bar{\eta}^{bac} u_{a}^{a} u_{a}^{a} f_{-1}^{c} f_{a}^{a} y_{b} u_{a}^{b} f_{-1}^{c} f_{a}^{b} y_{b} u_{a}^{b} u_{a}^{c} f_{-1}^{c} f_{b}^{b} u_{a}^{b} y_{b} u_{a}^{c} f_{-1}^{c} f_{b}^{b} u_{a}^{b} f_{b}^{c} f_{a}^{c} y_{b} u_{a}^{b} f_{a}^{c} f_{b}^{c} y_{b} y_{b} T_{bcc} + \text{H.c.} \\ 198 \\ \bar{\eta}^{bbcc} u_{a}^{b} u_{a}^{c} f_{-1}^{c} f_{a}^{c} y_{b} f_{a}^{c} f_{b}^{c} y_{b}^{c} y_{b} T_{bcc} + \text{H.c.} \\ 199 \\ \bar{\eta}^{bbcc} u_{a}^{b} u_{a}^{b} f_{-1}^{c} f_{a}^{c} y_{b} f_{a}^{c} f_{b}^{c} y_{b}^{c} y_{b} T_{bcc} + \text{H.c.} \\ 200 \\ \bar{\eta}^{bbc} u_{a}^{b} u_{a}^{b} f_{-1}^{c} f_{a}^{c} y_{b} f_{a}^{c} f_{b}^{c} y_{b}^{c} y_{b} T_{bcc} + \text{H.c.} \\ 201 \\ \bar{\eta}^{bbc} u_{a}^{b} u_{a}^{b} f_{-1}^{c} f_{a}^{c} y_{b} f_{a}^{c} f_{b}^{c} y_{b}^{c} y_{b}^{c} y_{b} T_{b} T_{bcc} + \text{H.c.} \\ 201 \\ \bar{\eta}^{bbc} u_{a}^{b} u_{a}^{b} f_{-1}^{c} f_{a}^{c} y_{b} f_{a}^{c} f_{a}^{c} y_{b}^{c} y_{b}^{c} y_{b}^{c} f_{a}^{c} y_{b}^{c} f_{a}^{c} y_{b}^{c} y_{b}^{c} y_{b}^{c} f_{a}^{c} y_{b}^{c} f_{a}^{c} y_{b}^{c} y_{b}^{c} y_{b}^{c} y_{b}^{c} y_{b}^{c} f_{a}^{c} f_{a}^{c} f_{a}^{c} f_{a}^{c} f_{a}^{c} f_{a}^{c} f_{a}^{c} y_{b}^{c} f_{a}^{c} y_{b}^{c} y_{b}^{c} y_{b}^{c} f_{a}^{c} f_{a}^{c$	$O_n^{(N_f,4)}$	SU(2)	SU(3)	$O_n^{(N_f,4)}$	SU(2)	SU(3)
$ \begin{split} & p^{abs} m_{q} h_{q}^{ab} f_{q}^{ab} f$	$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_d{}^{e\nu}f_{-e}{}^{f\lambda\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{bcf\rho}$ + H.c.		126	$i \overline{T}^{abc\mu} f_{+a}{}^{d}{}_{\mu}{}^{\nu} h_{d}{}^{e\lambda\rho} \gamma_5 \gamma_{\lambda} D_{\nu} T_{bce\rho} + \text{H.c.}$	197	405
$ \begin{split} & \frac{1}{2} e^{-k_{B}} e_{a}^{-k_{B}} e_{a}^{-k_{B}} e_{b}^{-k_{B}} e_{b}^{-k_$	$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_d{}^{e\nu}f_{-e}{}^{f\lambda\rho}\gamma_5\gamma_{\lambda}D_{\nu}T_{bcf\rho} + \text{H.c.}$		127	$i \bar{T}^{abc\mu} f_{+a} {a^{\prime}_{\mu}}^{\nu} h_d {}^{e\lambda\rho} \gamma_5 \gamma_{\lambda} D_{\rho} T_{bce\nu} + \text{H.c.}$	198	406
$ \frac{1}{1} e^{hest} u_{ab}^{he} u_{a}^{he} u$	$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u_d{}^{e\nu}f_{-e}{}^{f\lambda\rho}\gamma_5\gamma_{\lambda}D_{\rho}T_{bcf\nu} + \text{H.c.}$		128	$i \bar{T}^{abc\mu} f_{+a}{}^{d u\lambda} h_d{}^e{}_{\mu}{}^{ ho} \gamma_5 \gamma_{\nu} D_{\lambda} T_{bce ho} + \mathrm{H.c.}$	199	407
$ \begin{split} & \frac{1}{10^{10}m_{10}} \frac{1}{m_{10}} \frac{1}{r_{1}} $	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}f_{-d}{}^{f}{}_{\mu}{}^{\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{cef\rho} + \text{H.c.}$	43	129	$i \bar{T}^{abc\mu} f_{+a}{}^{d\nu\lambda} h_d{}^e{}_{\mu}{}^{ ho} \gamma_5 \gamma_{\nu} D_{ ho} T_{bce\lambda} + \mathrm{H.c.}$	200	408
$ \begin{split} & \frac{1}{r^{holog}} u_{ab}^{ab} u_{ab}^{c} f_{ab} u_{ab}^{c} f_$	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}f_{-d}{}^{f}{}_{\mu}{}^{\rho}\gamma_5\gamma_{\nu}D_{\rho}T_{cef\lambda} + \text{H.c.}$	44	130	$i \bar{T}^{abc\mu} f_{+a}{}^{d\nu\lambda} h_d{}^e{}_{\nu}{}^{\rho} \gamma_5 \gamma_\lambda D_{\rho} T_{bce\mu} + \text{H.c.}$	201	409
$ \begin{split} & T^{hors} u_{ab}^{h} u_{a}^{r} (j - u_{a}^{r})^{r} y_{3} D_{j} T_{cyp} + \text{H.c.} & 46 & 132 & iT^{hors} f_{j}^{h} u_{j}^{h} u_{j}^{h} u_{j}^{h} y_{3}^{h} D_{j} T_{abop} + \text{H.c.} & 411 \\ & T^{hors} u_{a}^{h} u_{a}^{h} (j - u_{a}^{h})^{r} y_{3} D_{j} T_{abop} + \text{H.c.} & 412 \\ & T^{hors} u_{a}^{h} u_{a}^{h} (j - u_{a}^{h})^{r} y_{3}^{h} D_{j} T_{abop} + \text{H.c.} & 412 \\ & T^{hors} u_{a}^{h} u_{a}^{h} (j - u_{a}^{h})^{r} y_{3}^{h} D_{j} T_{abop} + \text{H.c.} & 413 \\ & T^{hors} u_{a}^{h} u_{a}^{h} (j - u_{a}^{h})^{r} y_{3}^{h} D_{j} T_{abop} + \text{H.c.} & 411 \\ & T^{hors} u_{a}^{h} u_{a}^{h} (j - u_{a}^{h})^{r} y_{3}^{h} D_{j} T_{abop} + \text{H.c.} & 50 & 136 & T^{hors} f_{j}^{h} u_{a}^{h} h_{a}^{h} y_{3}^{r} y_{j}^{h} D_{j} T_{abop} & 4114 \\ & T^{hors} u_{a}^{h} u_{a}^{h} (j - u_{a}^{h})^{r} y_{3}^{h} D_{j} T_{abop} + \text{H.c.} & 51 & 137 & T^{hors} f_{j}^{h} u^{dab} h_{j}^{h} y_{3}^{r} y_{j}^{h} D_{j} u_{3}^{h} y_{3}^{h} H_{c} & 204 & 417 \\ & T^{hors} u_{a}^{h} u_{a}^{h} (j - u_{a}^{h})^{r} y_{3}^{h} D_{j} T_{abop} + \text{H.c.} & 51 & 137 & T^{hors} f_{j}^{h} u^{dab} h_{j}^{h} y_{3}^{r} y_{j}^{h} D_{j} u_{3}^{h} y_{3}^{h} H_{c} & 205 \\ & T^{hors} u_{a}^{h} u_{a}^{h} u_{a}^{h} (j - u_{a}^{h})^{r} y_{3}^{h} D_{j} T_{cotp} + \text{H.c.} & 51 & 137 & T^{hors} f_{j}^{h} u^{dab} y_{3}^{h} y_{j}^{h} D_{j} D_{j} y_{j} h_{a}^{h} dy_{3}^{h} y_{j}^{h} D_{j} h_{a}^{h} h_{a}^{h} h_{a}^{h} y_{3}^{h} y_{j}^{h} D_{j}^{h} h_{a}^{h} h_{a}^{h} h_{a}^{h} y_{3}^{h} y_{j}^{h} D_{j}^{h} h_{a}^{h} h_{a}^{h} h_{a}^{h} y_{3}^{h} y_{j}^{h} h_{a}^{h} $	$\bar{T}^{abc\mu}_{a} u_{a}^{\ d\nu} u_{d}^{\ e}_{\ \mu} f_{-b}^{\ f\lambda\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{cef\rho} + \text{H.c.}$	45	131	$i\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}h_{d}{}^{e}{}_{\nu}{}^{\rho}\gamma_{5}\gamma_{\rho}D_{\lambda}T_{bce\mu}$ + H.c.	202	410
$ \begin{split} & t^{abc} u_{ab}^{b} u_{ab}^{c} u_{ab}^{c} u_{f}^{c} y_{h}^{c} y_{h}^{c} D_{f} T_{abc} y_{f}^{c} u_{b}^{c} u_{h}^{b} u_{h}^{c} u_{h}^{c} u_{h}^{c} u_{h}^{c} u_{h}^{c} u_{h}^{c} u_{h}^{c} y_{h}^{c} D_{f} T_{abc} y_{h}^{c} + kc. & 413 \\ & t^{abc} u_{ab}^{b} u_{h}^{c} u_{h}^{c} u_{h}^{c} u_{h}^{c} v_{h}^{c} y_{h}^{c} D_{f} T_{abc} y_{h}^{c} + kc. & 413 \\ & t^{abc} u_{h}^{b} u_{h}^{c} u_{h}^{c} u_{h}^{c} v_{h}^{c} y_{h}^{c} D_{f} T_{abc} y_{h}^{c} + kc. & 50 \\ & 136 & t^{abc} T_{f}^{c} u^{ab} u_{h}^{c} u_{h}^{c} v_{h}^{c} D_{f} T_{b} v_{h}^{c} + kc. & 50 \\ & 136 & t^{abc} T_{f}^{c} u^{ab} u_{h}^{c} u_{h}^{c} v_{h}^{c} D_{f} T_{b} u_{h}^{c} + kc. & 204 \\ & 417 \\ & t^{abc} u_{h}^{c} u_{h}^{c} t_{h}^{c} t_{h}^{c} y_{h}^{c} y_{h}^{c} D_{f} t_{h}^{c} + kc. & 51 \\ & 137 & t^{abc} T_{f}^{c} u^{b} u_{h}^{c} u_{h}^{c} v_{h}^{c} D_{f} T_{b} u_{h}^{c} + kc. & 204 \\ & 417 \\ & t^{abc} u_{h}^{c} u_{h}^{c} t_{h}^{c} t_{h}^{c} v_{h}^{c} y_{h}^{c} D_{f} t_{h}^{c} + kc. & 204 \\ & 417 \\ & t^{abc} u_{h}^{c} u_{h}^{c} t_{h}^{c} t_{h}^{c} v_{h}^{c} y_{h}^{c} D_{h}^{c} t_{h}^{c} + kc. & 204 \\ & t^{abc} u_{h}^{c} u_{h}^{c} t_{h}^{c} t_{h}^{c} v_{h}^{c} y_{h}^{c} D_{h}^{c} t_{h}^{c} + kc. & 204 \\ & t^{abc} u_{h}^{c} u_{h}^{c} t_{h}^{c} t_{h}^{c} v_{h}^{c} y_{h}^{c} D_{h}^{c} t_{h}^{c} + kc. & 204 \\ & t^{abc} u_{h}^{c} u_{h}^{c} t_{h}^{c} t_{h}^{c} u_{h}^{c} y_{h}^{c} t_{h}^{c} $	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}f_{-d}{}^{f\lambda\rho}\gamma_5\gamma_\lambda D_\rho T_{cef\mu} + \text{H.c.}$	46	132	$i \overline{T}^{abc\mu} f_+ {}^{de}{}_{\mu}{}^{\nu} h_{ed}{}^{\lambda ho} \gamma_5 \gamma_{\nu} D_{\lambda} T_{abc ho} + \mathrm{H.c.}$		411
$ \begin{split} & T^{hot}m_{u}^{h} u_{b} c^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{cefp} + H.c. & 48 & 134 & iT^{hot}e_{f} - id^{h}h_{cb}^{h} \gamma_{S}^{h} D_{l} T_{abcp} & 413 \\ & T^{hot}m_{u}^{h} u_{b} c^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{cefp} + H.c. & 50 & 136 & iT^{hot}e_{f} - id^{h}h_{cb}^{h} \gamma_{S}^{h} D_{l} T_{cdm} & 414 \\ & T^{hot}m_{u}^{h} u_{b} c^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{cefp} + H.c. & 51 & 137 & iT^{hot}e_{f} - id^{h}h_{cb}^{h} \gamma_{S}^{h} D_{l} T_{cdm} & 416 \\ & T^{hot}m_{u}^{h} u_{b} c^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{cefp} + H.c. & 51 & 137 & iT^{hot}e_{f} - id^{h}h_{cb}^{m} \gamma_{S}^{h} D_{l} D_{l} T_{cdm} & 416 \\ & T^{hot}m_{u}^{h} u_{b} c^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{cefp} + H.c. & 52 & 138 & iT^{hot}e_{f} - id^{h}h_{cb}^{m} \gamma_{S}^{h} D_{l} T_{cdm} + H.c. & 206 \\ & T^{hot}m_{u}^{h} u_{b} c^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{cefp} + H.c. & 54 & 111 & iT^{hot}e_{f} - id^{h}h_{cb}^{h} \gamma_{S}^{h} D_{l} T_{bcdp} + H.c. & 206 \\ & T^{hot}m_{u}^{h} u_{b} c^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{cefp} + H.c. & 55 & 143 & iT^{hot}e_{f} - id^{h}h_{cb}^{h} \gamma_{S}^{h} D_{l} T_{bcdp} & 209 \\ & T^{hot}m_{u}^{h} u_{b}^{h} d^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{bcdp} + H.c. & 144 & iT^{hot}e_{f} - id^{h}h_{cb}^{h} \gamma_{S}^{h} D_{l} T_{bcdp} & 209 \\ & T^{hot}m_{u}^{h} u_{b}^{h} d^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{bcdp} + H.c. & 144 & iT^{hot}e_{f} - id^{h}h_{cb}^{h} \gamma_{S}^{h} D_{l} T_{bcdp} & 210 \\ & T^{hot}m_{u}^{h} u_{b}^{h} d^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{bcdp} + H.c. & 144 & iT^{hot}e_{f} - id^{h}h_{cb}^{h} \gamma_{S}^{h} D_{l} T_{cdm} & 210 \\ & T^{hot}m_{u}^{h} u_{b}^{h} d^{h}_{l} - f_{s}^{h} \gamma_{S}^{h} D_{l} T_{bcd} + H.c. & 144 & iT^{hot}e_{f} - id^{h}h_{cb}^{h} \gamma_{S}^{h} D_{l} T_{cdm} & 211 \\ & T^{hot}m_{u}^{h} u_{b}^{h} d^{h}_{l} f_{s}^{h} \gamma_{S}^{h} D_{l} T_{cdm} & 110 \\ & T^{hot}m_{u}^{h} u_{b}^{h} d^{h} (\gamma_{S}^{h} D_{l} D_{l} T_{cdm} & 110 \\ & T^{hot}m_{u}^{h} u_{b}^{h} d^{h} \gamma_{S}^{h} D_{l} T_{cdm} & 110 \\ & T^{hot}m_{u}^{h} u_{b}^{h} d^{h} \gamma_{S}^{h} D_{l} T_{cdm} & 110 \\ & T^{$	$\bar{T}^{abc\mu}u_a{}^d{}_{\mu}u^{ef\nu}f_{-be}{}^{\lambda\rho}\gamma_5\gamma_{\lambda}D_{\nu}T_{cdf\rho} + \text{H.c.}$	47	133	$i \bar{T}^{abc\mu} f_+ {}^{de}{}_{\mu}{}^{\nu} h_{ed}{}^{\lambda ho} \gamma_5 \gamma_{\lambda} D_{\nu} T_{abc ho} + \mathrm{H.c.}$		412
$ \begin{split} & \frac{1}{1} e^{hos} u_{ab} u_{b} d_{c} f_{-c} f_{c} g_{SL} D_{c} T_{cefp} + Hc. & 49 & 135 & if \frac{1}{1} e^{hos} f_{-d} e^{h} h_{cb} f_{SL} D_{c} T_{cefp} & 416. & 50 & 136 & if \frac{1}{1} e^{hos} f_{-d} e^{h} h_{cb} f_{SL} D_{c} T_{cefp} & 415. & 51 & 137 & if \frac{1}{1} e^{hos} f_{-d} e^{h} h_{cb} f_{SL} D_{c} T_{cefp} & 416. & 51 & 137 & if \frac{1}{1} e^{hos} f_{-d} e^{h} h_{cb} f_{SL} D_{c} T_{cefp} & 416. & 204 & 417 & 516 & 117 & 516 & 117 & 516 & 117 & 517 &$	$\bar{T}^{abc\mu}_{a} u_{a}^{\ d\nu} u_{b}^{\ e\lambda} f_{-d}^{\ f}_{\ \mu}{}^{\rho} \gamma_{5} \gamma_{\lambda} D_{\nu} T_{cef\rho} + \text{H.c.}$	48	134	$i \bar{T}^{abc\mu} f_+^{de u\lambda} h_{ed\mu}^{\ ho} \gamma_5 \gamma_{ u} D_{\lambda} T_{abc ho}$		413
$ \begin{split} & \text{Teberg}_{ab} u_{ab}^{b} u_{a}^{b} u_{$	$\bar{T}^{abc\mu} u_a{}^{d\nu} u_b{}^{e\lambda} f_{-d}{}^f{}_{\mu}{}^{\rho} \gamma_5 \gamma_\lambda D_{\rho} T_{cef\nu} + \text{H.c.}$	49	135	$i\bar{T}^{abc\mu}f_{+}^{de u\lambda}h_{ed u}^{ ho}\gamma_{5}\gamma_{\lambda}D_{ ho}T_{abc\mu}$		414
$ \begin{split} & Taber_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{2}} r_{S_{f}} p_{D_{f}} T_{cefp} + H.c. & 51 & 137 & iT^{aber}_{f_{-a}} d^{ab}_{h_{0}} r_{b} r_{S_{f}} p_{D_{f}} T_{cefp} + H.c. & 204 & 417 \\ \hline Taber_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{2}} r_{S_{f}} p_{D_{f}} T_{cefp} + H.c. & 52 & 138 & iT^{aber}_{f_{-a}} d^{b}_{h_{0}} r_{b} r_{S_{f}} p_{D_{f}} T_{becq} + H.c. & 204 & 417 \\ \hline Taber_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{2}} r_{S_{f}} p_{D_{f}} T_{cefp} + H.c. & 53 & 140 & iT^{aber}_{f_{-a}} d^{b}_{h_{0}} r_{S_{f}} p_{D_{f}} T_{bedp} + H.c. & 206 \\ \hline Taber_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{2}} r_{S_{f}} p_{D_{f}} T_{befp} + H.c. & 54 & 141 & iT^{aber}_{f_{-a}} d^{b}_{h_{0}} r_{S_{f}} p_{D_{f}} T_{bedp} & 208 \\ \hline Taber_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{2}} r_{S_{f}} p_{D_{f}} T_{befp} + H.c. & 55 & 143 & iT^{aber}_{f_{-a}} d^{b}_{h_{0}} r_{S_{f}} p_{D_{f}} T_{bedp} & 209 \\ \hline Taber_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{2}} r_{S_{f}} p_{D_{f}} T_{befp} + H.c. & 55 & 143 & iT^{aber}_{f_{-a}} d^{b}_{h_{0}} r_{S_{f}} p_{D_{0}} T_{bedp} & 210 \\ \hline Taber_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{2}} r_{S_{f}} p_{D_{f}} T_{befp} + H.c. & 144 & iT^{aber}_{f_{-a}} d^{b}_{h_{0}} r_{S_{f}} p_{D_{0}} T_{bedp} & 210 \\ \hline Tabeu_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{2}} r_{S_{f}} p_{D_{f}} T_{bedp} + H.c. & 146 & iT^{aber}_{f_{-a}} d^{b}_{h_{0}} r_{S_{f}} p_{D_{0}} T_{cdp} & 211 \\ \hline Tabeu_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{2}} r_{S_{f}} p_{D_{f}} T_{bedp} + H.c. & 146 & iT^{aber}_{f_{-a}} d^{b}_{h_{0}} r_{S_{f}} r_{S_{f}} p_{D_{0}} T_{cdp} & 212 \\ \hline Tabeu_{u_{a}} du_{u_{b}} c_{f_{-1}} c_{f_{0}} r_{S_{f}} p_{D_{f}} T_{bedp} + H.c. & 146 & iT^{aber}_{f_{-a}} d^{b}_{h_{0}} r_{S_{f}} r_{S_{f}} p_{D_{f}} T_{cdp} & 213 \\ \hline Tabeu_{u_{a}} du_{u_{b}} c_{f_{-1}} r_{s_{f}} r_{S_{f}} p_{D_{f}} T_{bedp} + H.c. & 150 & iT^{aber}_{f_{-a}} r_{u_{0}} r_{S_{f}} r_{S_{f}} p_{D_{f}} T_{becp} & H.c. & 214 \\ \hline 220 & Tabeu_{u_{a}} du_{u_{f}} r_{f_{-1}} r_{f_{0}} r_{S_{f}} p_{D_{f}} T_{becp} + H.c. & 151 & iT^{aber}_{F_{1}} r_{u_{h}} r_{h_{h}} r_{h_{h}} r_{h_{h$	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\mu}f_{-b}{}^{f\lambda\rho}\gamma_5\gamma_{\lambda}D_{\nu}T_{cef\rho} + \text{H.c.}$	50	136	$i \bar{T}^{abc\mu} f_+^{de u\lambda} h_{ed u}{}^{ ho} \gamma_5 \gamma_{ ho} D_{\lambda} T_{abc\mu}$		415
$ \begin{split} & Tabes_{u_{a}} du_{b} f_{-d}^{-1} f_{2} f_$	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}f_{-d}{}^{f}{}_{\mu}{}^{\rho}\gamma_5\gamma_{\rho}D_{\lambda}T_{cef\nu} + \text{H.c.}$	51	137	$iT^{abc\mu}f_{+a}{}^{d\nu\lambda}h_b{}^{e\rho\sigma}\gamma_5\gamma_\nu D_{\lambda\rho\sigma}T_{cde\mu}$	203	416
$ \begin{split} & Tabcu_{ab}^{b} u_{b}^{a} f_{-d}^{b} (r_{SY}, D) T_{bcfp} + \text{H.c.} & 139 & iT^{abcr} f_{+s}^{b} h_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 206 \\ & T^{abcr} u_{ab}^{b} u_{b}^{c} f_{-d}^{b} (r_{SY}, D) T_{bcfp} + \text{H.c.} & 53 & 140 & iT^{abcr} f_{+s}^{b} h_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 206 \\ & T^{abcr} u_{ab}^{b} u_{c}^{c} f_{-d}^{b} (r_{SY}, D) T_{bcfp} + \text{H.c.} & 54 & 141 & iT^{abcr} f_{+s}^{b} h_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 208 \\ & T^{abcr} u_{ab}^{b} u_{c}^{c} f_{-d}^{b} (r_{SY}, D) T_{bcfp} + \text{H.c.} & 142 & iT^{abcr} f_{+s}^{b} h_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 209 \\ & T^{abcr} u_{ab}^{b} u_{c}^{c} f_{-d}^{b} (r_{SY}, D) T_{bcfp} + \text{H.c.} & 55 & 143 & iT^{abcr} f_{+s}^{b} h_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 210 \\ & T^{abcr} u_{ab}^{b} u_{a}^{c} f_{-d}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 146 & iT^{abcr} f_{+s}^{b} h_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 211 & 419 \\ & T^{abcr} u_{a}^{b} u_{a}^{b} f_{-f}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 146 & iT^{abcr} f_{+s}^{b} (r_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 212 & 420 \\ & T^{abcr} u_{a}^{b} u_{a}^{b} f_{-f}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 148 & iT^{abcr} f_{+s}^{b} (r_{a}^{b} (u_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 214 & 422 \\ & T^{abcr} u_{a}^{b} u_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 148 & iT^{abcr} f_{+s}^{b} (r_{a}^{b} (u_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 214 & 422 \\ & T^{abcr} u_{a}^{b} u_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 150 & iT^{abcr} f_{+s}^{b} (r_{a}^{b} (u_{a}^{b} (r_{SY}, D) T_{bcdp} + \text{H.c.} & 214 & 422 \\ & T^{abcr} u_{a}^{b} u_{a}^{c} (r_{s}^{b} (r_{s}^{b}$	$T^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}f_{-d}{}^{f}{}_{\nu}{}^{\rho}\gamma_5\gamma_{\lambda}D_{\rho}T_{cef\mu} + \text{H.c.}$	52	138	$iT^{abc\mu}f_{+a}{}^{d\nu\lambda}h_{d}{}^{e\rho\sigma}\gamma_{5}\gamma_{\nu}D_{\lambda\rho\sigma}T_{bce\mu}$ + H.c.	204	417
$ \begin{split} & T^{abc}u_{ab}^{ab}u_{b}^{cb}f_{-d}^{b}r_{b}r_{b}r_{b}r_{b}r_{b}r_{b}r_{b}}h_{a}^{b}u_{b}r_{b}r_{b}r_{b}h_{c}h} = 110 \\ T^{abc}u_{a}^{b}u_{a}^{b}u_{b}r_{b}r_{b}r_{b}r_{b}r_{b}h_{c}h + Hc. & 146 & iT^{abc}r_{b}r_{b}r_{b}r_{b}r_{b}r_{b}r_{b}u_{b}^{c}u_{b}r_{b}r_{b}r_{b}r_{b}h_{a}^{c}h} + Ic. & 148 & iT^{abc}r_{b}r_{b}r_{b}r_{b}r_{b}r_{b}r_{b}r_{b$	$T^{abc\mu}_{a} u_{a}^{d}_{\mu} u^{ef\nu} f_{-de}^{\lambda\rho} \gamma_5 \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \text{H.c.}$		139	$iT^{abc\mu}f_{s,+\mu}{}^{\nu}h_a{}^{d\lambda\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{bcd\rho}$ + H.c.	205	
$ \begin{split} & T^{abc}_{abc}(a_{a}^{b}u_{b}^{cf}) - f_{a}^{cf}(y_{3}y_{a}) D_{cf}^{c} + Hc. & 54 & 141 & iT^{abc}_{a}f_{s,s}^{ch}h_{a}^{b}u_{s}^{c}(y_{3}y_{a}) D_{cb}(a) & 208 \\ & T^{bbc}u_{a}^{d}u_{a}^{cf}(s_{a}^{cf}) - f_{a}^{cf}(y_{3}y_{3}) D_{cf}(s_{b}) + Hc. & 5143 & iT^{abc}_{a}f_{s,s}^{ch}h_{a}^{d}u_{s}^{c}(y_{3}y_{a}) D_{bc}(a) & 209 \\ & T^{abc}u_{a}^{d}u_{a}^{cf}(s_{a}^{cf}) - f_{a}^{cf}(y_{3}y_{a}) D_{cf}(s_{b}) + Hc. & 56 & 143 & iT^{abc}_{a}f_{s,s}^{ch}h_{a}^{d}u_{s}^{c}(y_{3}y_{a}) D_{a}^{c} T_{abc}u & 418 \\ & iT^{abc}u_{a}^{d}u_{a}^{cf}(s_{a}^{cf}) - f_{a}^{cf}(y_{3}y_{a}) D_{a}^{c}(s_{c}) + Hc. & 56 & 145 & iT^{abc}_{a}y_{a}^{c}h_{a}^{d}u_{s}^{c}(y_{3}y_{a}) D_{a}^{c} T_{abc}u & 419 \\ & T^{abc}u_{a}^{d}u_{a}^{cf}(s_{a}^{cf}-f_{a}^{cf}(y_{3}y_{a})) D_{a}^{c}(s_{c}) + Hc. & 146 & iT^{abc}_{a}y_{a}^{c}h_{a}^{b}(y_{3}^{c}y_{a}) D_{a}^{c} T_{abc}u & 212 & 420 \\ & T^{abc}u_{a}^{d}u_{a}^{cf}(s_{a}^{cf}-f_{a}^{cf}(y_{3}y_{a})) D_{a}^{c}(s_{c}) + Hc. & 148 & iT^{abc}_{a}y_{a}^{c}h_{a}^{b}(y_{3}^{c}y_{a}) D_{a}^{c}(s_{c}) & 211 & 419 \\ & T^{abc}u_{a}^{d}u_{a}^{c}(s_{a}^{cf}-f_{a}^{c}(y_{3}y_{a})) D_{a}^{c}(s_{c}) + Hc. & 148 & iT^{abc}_{a}y_{a}^{c}h_{a}^{c}(y_{3}y_{a}) D_{a}^{c}(s_{c}) & 214 & 422 \\ & T^{abc}u_{a}^{d}u_{a}^{c}(s_{a}^{c}) f_{a}^{c}(y_{3}y_{a}) D_{a}^{c}(s_{c}) & Hc. & 215 & 423 \\ & T^{abc}u_{a}^{d}u_{a}^{c}(s_{a}^{c}) f_{a}^{c}(y_{3}y_{a}) D_{a}^{c}(s_{c}) & Hc. & 150 & iT^{abc}_{a}y_{a}^{c}h_{a}^{c}(y_{3}y_{a}) D_{a}^{c}(s_{c}) & 211 \\ & T^{abc}u_{a}^{d}u_{a}^{c}(s_{a}^{c}) f_{a}^{c}(y_{3}y_{a}) D_{a}^{c}(s_{c}) & Hc. & 216 & 424 \\ & T^{abc}u_{a}^{d}u_{a}^{c}(s_{a}^{c}) f_{a}^{c}(y_{a}^{c}) f_{a}^{c}(y_{a}^{c}) f_{a}^{c}) f_{a}^{c}(y_{a}^{c}) f_{a$	$T^{abc\mu}_{a} u_{a}^{d\nu} u_{b}^{e\lambda} f_{-d}^{f}{}_{\nu}^{\rho} \gamma_{5} \gamma_{\rho} D_{\lambda} T_{cef\mu} + \text{H.c.}$	53	140	$iT^{abc\mu}f_{s,+\mu}{}^{\nu}h_{a}{}^{d\lambda\rho}\gamma_{5}\gamma_{\lambda}D_{\nu}T_{bcd\rho}$ + H.c.	206	
$ \begin{split} & T^{abc}u_{ab}^{a}u_{c}^{ab}f_{-ab}^{a}r_{g}x_{f}, D_{i}T_{bcfp} + \text{H.c.} & 142 iT^{abc}r_{f}, u^{b}h_{a}^{a}r_{g}x_{f}, D_{i}^{a}T_{bcdy} & 208 \\ & T^{abc}u_{a}^{a}u_{c}^{a}f_{-c}^{b}r_{g}x_{f}, D_{i}T_{bcfp} + \text{H.c.} & 55 & 143 iT^{abc}r_{f}, u^{b}h_{a}^{b}r_{g}x_{f}, D_{i}T_{bcdy} & 209 \\ & T^{abc}u_{a}^{a}u_{c}^{a}f_{-c}^{b}r_{g}x_{f}, D_{i}T_{cefp} + \text{H.c.} & 144 iT^{abc}r_{f}, u^{b}h_{a}^{b}r_{g}x_{f}, D_{i}T_{bcdy} & 210 \\ & T^{abc}u_{a}^{b}u_{c}^{b}f_{-c}^{b}r_{g}x_{f}, D_{i}T_{bcfp} + \text{H.c.} & 144 iT^{abc}r_{f}, u^{b}h_{a}^{b}r_{g}x_{f}, D_{i}T_{bcdy} & 211 \\ & 419 \\ & T^{abc}u_{a}^{b}u_{c}^{b}f_{-f}^{b}r_{g}^{b}x_{g}x_{i}, D_{i}T_{bcdy} + \text{H.c.} & 146 iT^{abc}r_{g}r_{i}^{b}r_{a}^{b}u_{i}^{b}r_{g}x_{f}^{b}D_{i}T_{cdy} & 212 \\ & 200 \\ & T^{abc}u_{a}^{b}u_{a}^{b}r_{f}^{b}-r_{g}^{b}r_{g}x_{f}, D_{i}T_{bcdy} + \text{H.c.} & 148 \\ & iT^{abc}r_{g}r_{i}r_{a}^{b}u_{a}^{b}r_{g}x_{f}^{b}D_{i}T_{cdy} & 212 \\ & 202 \\ & T^{abc}u_{a}^{b}u_{a}^{b}r_{f}^{b}-r_{g}^{b}r_{g}x_{f}, D_{i}T_{bcdy} + \text{H.c.} & 148 \\ & iT^{abc}r_{g}r_{i}r_{a}^{b}u_{a}^{b}r_{g}x_{f}^{b}D_{i}T_{cdy} & 212 \\ & 202 \\ & T^{abc}u_{a}^{b}u_{a}^{b}r_{g}^{b}-r_{g}^{b}r_{g}x_{f}, D_{i}T_{bcdy} + \text{H.c.} & 148 \\ & iT^{abc}r_{g}r_{i}r_{a}^{b}u_{a}^{b}r_{g}x_{f}^{b}D_{i}T_{cdy} & 114 \\ & 211 \\ & T^{abc}u_{a}^{b}u_{a}^{b}r_{g}^{b}r_{g}x_{f}^{b}D_{i}T_{cdy} & 116 \\ & 124 \\ & 222 \\ & T^{abc}u_{a}^{b}u_{a}^{b}r_{g}^{b}r_{g}^{b}r_{g}x_{f}D_{i}T_{bcg} + \text{H.c.} & 150 \\ & iT^{abc}r_{g}r_{g}^{b}r_{d}^{b}r_{g}x_{g}r_{g}D_{i}T_{bcg} + \text{H.c.} & 216 \\ & 424 \\ & T^{abc}u_{a}^{b}u_{a}^{b}r_{g}^{b}r_{g}^{b}r_{g}r_{g}D_{i}T_{bcg} + \text{H.c.} & 153 \\ & iT^{abc}r_{g}r_{g}r_{g}^{b}r_{d}^{b}r_{g}r_{g}r_{g}D_{i}T_{bcg} + 116 \\ & 11^{abc}r_{g}r_{g}r_{g}r_{g}^{b}r_{g}r_{g}D_{i}T_{bcg} + 116 \\ & 11^{abc}r_{g}r_{g}r_{g}r_{g}D_{i}T_{bcg} + 116 \\ & 11^{abc}r_{g}r_{g}r_{g}r_{g}D_{i}T_{bcg} + 116 \\ & 12^{abc}r_{g}r_{g}r_{g}r_{g}D_{i}T_{bcg} + 116 \\ & 12^{abc}r_{g}r_{g}r_{g}r_{g}D_{i}T_{bcg} + 116 \\ & 12^{abc}r_{g}r_{g}r_{g}r_{g}D_{i}T_{bcg} + 116 \\ & 12^{abc}r_{g}r_{g$	$T^{abc\mu}_{a} u_{a}^{d\nu} u_{b}^{e\lambda} f_{-d}^{f}_{\lambda}{}^{\rho} \gamma_{5} \gamma_{\nu} D_{\rho} T_{cef\mu} + \text{H.c.}$	54	141	$iT^{abc\mu}f_{s,+}^{\nu\lambda}h_a^{a}{}_{\mu}^{\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{bcd\rho}$	207	
$\begin{split} & T^{abc} u_{ab}^{ab} u_{ab}^{cf} f_{-b} u_{f}^{b} \gamma_{ST} D_{s}^{T} h_{cfp} + \text{H.c.} & 55 & 143 & iT^{abc} u_{a}^{c} u_{h}^{b} u_{a}^{b} u_{h}^{c} f_{-c}^{-b} \gamma_{ST} D_{s}^{-T} h_{cdp} & 209 \\ & T^{abc} u_{a}^{b} u_{b}^{c} f_{-c}^{-b} \gamma_{ST} D_{s}^{-T} h_{cdp} + \text{H.c.} & 144 & iT^{abc} f_{s} u_{s}^{-b} h_{ad}^{b} \sigma_{ST} D_{s}^{-T} h_{cdp} & 210 \\ & T^{abc} u_{a}^{b} u_{b}^{c} f_{-c}^{-b} \gamma_{ST} D_{s}^{-T} h_{cdp} + \text{H.c.} & 56 & 145 & iT^{abc} f_{s}^{-d} u_{b}^{b} \sigma_{ST} D_{s}^{-T} h_{cdp} & 211 & 419 \\ & T^{abc} u_{a}^{b} u_{a}^{c} f_{-f}^{-b} \gamma_{ST} D_{s}^{-T} h_{cdp} + \text{H.c.} & 146 & iT^{abc} \nabla v_{f}^{-d} u_{b}^{-d} \sigma_{ST}^{b} D_{s}^{-T} h_{cdp} & 212 & 420 \\ & T^{abc} u_{a}^{b} u_{a}^{c} u_{b}^{c} f_{-c}^{-b} \gamma_{ST} D_{s}^{-T} h_{cdp} + \text{H.c.} & 148 & iT^{abc} \nabla v_{f}^{-d} u_{a}^{b} u_{b}^{c} \gamma_{ST} D_{s}^{-T} h_{cdp} & 122 & 420 \\ & T^{abc} u_{a}^{b} u_{a}^{c} u_{b}^{c} f_{-c}^{-b} \gamma_{ST} D_{s} D_{b}^{-b} h_{cc} & 149 & iT^{abc} \nabla v_{f}^{-d} u_{a}^{b} u_{a}^{c} \gamma_{ST} D_{s}^{-T} h_{cdp} & 122 & 420 \\ & T^{abc} u_{a}^{b} u_{a}^{c} u_{b}^{c} f_{-c}^{-b} \gamma_{ST} D_{s} D_{b}^{-b} h_{cc} & 149 & iT^{abc} \nabla v_{f}^{-d} u_{a}^{b} u_{a}^{c} \gamma_{ST} D_{s}^{-T} h_{cdp} & 142 & 223 \\ & T^{abc} u_{a}^{b} u_{a}^{c} u_{b}^{c} f_{-c}^{-b} \gamma_{ST} D_{s} D_{b}^{-b} h_{cr} & 153 & iT^{abc} \nabla v_{f}^{-d} u_{a}^{b} u_{a}^{c} \gamma_{ST} D_{s}^{-T} h_{cdp} & 142 & 216 \\ & 424 & T^{abc} u_{a}^{b} u_{a}^{c} u_{s}^{c} f_{-c}^{-b} \gamma_{ST} D_{s} D_{s}^{-b} h_{cs} & 153 & iT^{abc} \nabla v_{f}^{-d} u_{a}^{b} u_{a}^{c} \gamma_{ST} D_{s}^{-T} h_{cdp} & 1217 \\ & T^{abc} u_{a}^{b} u_{a}^{c} u_{s}^{c} f_{-c}^{-b} v_{ST} D_{s} D_{s}^{-b} h_{cs} & 153 & iT^{abc} \nabla v_{f}^{-d} u_{a}^{b} u_{a}^{c} \gamma_{ST} D_{s}^{-T} h_{cdp} & 216 \\ & T^{abc} u_{a}^{b} u_{a}^{c} u_{s}^{c} f_{-c}^{-b} v_{s}^{s} Y_{s} D_{s}^{-T} h_{cdp} & 1217 \\ & T^{abc} u_{a}^{b} u_{a}^{c} u_{s}^{c} f_{-c}^{-b} \gamma_{ST} D_{s} D_{s}^{-b} h_{s} & 1.6 & 153 & iT^{abc} \nabla v_{s}^{-b} u_{a}^{b} u_{a}^{c} \gamma_{ST} D_{s}^{-T} h_{cdp} & 1217 \\ & T^{abc} u_{a}^{b} u_{a}^{c} d_{s}^{-c} f_{s}^{c} \gamma_{ST} D_$	$T^{abc\mu}_{a \mu} u^{a \mu}_{a \mu} u^{e f \nu}_{f - d e} \gamma_5 \gamma_{\lambda} D_{\nu} T_{bcf\rho} + \text{H.c.}$		142	$iT^{abc\mu}f_{s,+}^{\nu\lambda}h_a^{a}{}_{\nu}^{\rho}\gamma_5\gamma_{\lambda}D_{\rho}T_{bcd\mu}$	208	
$ \begin{split} & 144 & i T^{aabc} \mu_{a}^{a} \mu_{b}^{a} \eta_{c}^{a} \eta_{c}^{b} \gamma_{5} \gamma_{b} D_{c} T_{bc} \eta_{\mu} + \text{Ic.} & 144 & i T^{aabc} \mu_{a}^{c} \mu_{a}^{b} \mu_{a}^{b} \eta_{5}^{c} D_{b} \eta_{c}^{c} T_{bc} \eta_{\mu} & (16 - 1)^{b} \gamma_{5} \gamma_{b} D_{c} T_{bc} \eta_{\mu} + \text{Ic.} & 56 & 145 & i T^{abc} \mu_{a}^{b} \eta_{c}^{b} \eta_{5} \gamma_{b} D_{c} \eta_{c} - \eta_{c} \eta_{c} & 211 & 419 \\ \bar{T}^{abc} \mu_{a}^{b} \mu_{a}^{c} \mu^{c} (1^{c} - 1^{c} \eta_{5} \gamma_{5} \gamma_{b} D_{c} T_{bc} \eta_{\mu} + \text{Ic.} & 146 & i T^{abc} \eta_{c}^{b} \eta_{c}^{b} \gamma_{5} \gamma_{b} D_{c} T_{c} \eta_{\mu} & 212 & 420 \\ \bar{T}^{abc} \mu_{a}^{b} \mu_{a}^{c} \mu^{c} (1^{c} - 1^{c} \eta_{5} \gamma_{5} \gamma_{b} D_{c} T_{bc} \eta_{\mu} + \text{Ic.} & 148 & i T^{abc} \eta_{c} \gamma_{c} \eta_{c}^{b} \gamma_{5} \gamma_{b} D_{c} T_{bc} \eta_{\mu} + \text{Ic.} & 148 & i T^{abc} \eta_{c} \gamma_{c} \eta_{c}^{b} \gamma_{5} \gamma_{b} D_{c} T_{bc} \eta_{\mu} + \text{Ic.} & 214 & 422 \\ \bar{T}^{abc} \mu_{a}^{b} \mu_{a}^{c} \eta_{c}^{c} \eta_{c}^{c} \gamma_{5} \gamma_{5} D_{c} T_{bc} \eta_{\mu} + \text{Ic.} & 150 & i T^{abc} \eta_{c}^{b} \eta_{c}^{c} \eta_{5} \gamma_{5} \gamma_{b} D_{c} T_{bc} \eta_{\mu} + \text{Ic.} & 216 & 424 \\ \bar{T}^{abc} \mu_{a}^{b} \mu_{a}^{c} \eta_{c}^{c} \eta_{c}^{c} \gamma_{5} \gamma_{5} D_{c} T_{bc} \eta_{c} + \text{ILc.} & 57 & 151 & i T^{abc} \eta_{c} \gamma_{c} \eta_{c}^{c} \eta_{c}^{c} \gamma_{5} \gamma_{5} D_{c} T_{bc} \eta_{\mu} + \text{IL.} & 216 & 424 \\ \bar{T}^{abc} \mu_{a}^{b} \mu_{a}^{c} \eta_{c}^{c} \eta_{c}^{c} \gamma_{5} \gamma_{5} D_{c} T_{bc} \eta_{c} + \text{IL.} & 58 & 152 & i T^{abc} \eta_{c} \gamma_{c} \eta_{c}^{c} \eta_{c}^$	$T^{abc\mu}_{a} u_{a}^{a\nu} u_{d}^{e\lambda} f_{-b}^{J}{}_{\mu}{}^{\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{cef\rho} + \text{H.c.}$	55	143	$iT^{abc\mu}f_{s,+}^{\ \nu\lambda}h_a^{\ a}{}_{\nu}^{\ \rho}\gamma_5\gamma_{ ho}D_{\lambda}T_{bcd\mu}$	209	
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	$T^{abc\mu}u_a{}^{a\nu}u_d{}^e_{\mu}f_{-e}{}^{J\lambda\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{bcf\rho} + \text{H.c.}$		144	$iT^{abc\mu}f_{s,+}^{\ \nu\lambda}h_a^{\ a\rho\sigma}\gamma_5\gamma_{\nu}D_{\lambda\rho\sigma}T_{bcd\mu}$	210	44.0
$\begin{aligned} & 146 \mu_{ab}^{ab} \mu^{ab} f^{-b} f^{-ab} \gamma_{5} \gamma_{b} D_{c} T_{bcdp} + \text{H.c.} & 146 i T^{abc} V^{b} f_{-ab}^{-ab} \mu_{b}^{ab} \gamma_{b}^{ab} \gamma_{5} \gamma_{b} D_{c}^{b} T_{cdep} & 211 & 419 \\ \bar{T}^{abc} \mu_{ab}^{ab} \mu^{cb} f_{-f} f_{c}^{b} \gamma_{5} \gamma_{b} D_{c} T_{bcdp} + \text{H.c.} & 147 i \bar{T}^{abc} V^{b} f_{-a}^{-ab} \mu_{b}^{c} \gamma_{5} \gamma_{b} D_{c}^{b} T_{cdep} & 213 & 421 \\ \bar{T}^{abc} \mu_{ab}^{ab} \mu^{cb} f_{-f} f_{c}^{b} \gamma_{5} \gamma_{b} D_{c} T_{bcfp} + \text{H.c.} & 148 i \bar{T}^{abc} V^{b} f_{-a}^{-ab} \mu_{b}^{c} \gamma_{5} \gamma_{c} D_{c} T_{cdep} & 213 & 421 \\ \bar{T}^{abc} \mu_{ab}^{ab} \mu^{cb} \mu^{c} f_{c}^{b} \gamma_{5} \gamma_{b} D_{c} T_{bcfp} + \text{H.c.} & 149 i \bar{T}^{abc} V^{b} f_{+a}^{-a} \mu^{b} \mu^{c} \gamma_{5} \gamma_{c} D_{c} T_{bcep} + \text{H.c.} & 214 & 422 \\ \bar{T}^{abc} \mu_{ab}^{ab} \mu^{cb} \eta^{c} \gamma_{5} \gamma_{c} D_{c} T_{cefp} + \text{H.c.} & 57 & 151 i \bar{T}^{abc} V^{b} f_{+a}^{-b} \mu^{b} \mu^{c} \gamma_{5} \gamma_{c} D_{c} T_{bcep} + \text{H.c.} & 216 & 424 \\ \bar{T}^{abc} \mu^{ab} \mu^{ab} \mu^{cb} \eta^{c} \gamma_{5} \gamma_{c} D_{c} T_{cefp} + \text{H.c.} & 58 & 152 i \bar{T}^{abc} V^{b} f_{+a}^{-b} \mu^{b} \eta^{c} \gamma_{5} \gamma_{c} D_{c} T_{bcd\mu} & 218 \\ \bar{T}^{abc} \mu_{ab}^{ab} \mu^{cb} \eta^{c} \gamma_{5} \gamma_{c} D_{c} T_{bcfp} + \text{H.c.} & 154 i \bar{T}^{abc} V^{b} f_{+a}^{-b} \mu^{a} \eta^{c} \gamma_{5} \gamma_{c} D_{c} T_{bcd\mu} & 218 \\ \bar{T}^{abc} \mu^{ab} \mu^{ab} \mu^{cb} \eta^{c} \gamma_{5} \gamma_{c} D_{c} T_{bcfp} + \text{H.c.} & 155 i \bar{T}^{abc} V^{b} f_{+a}^{-b} \mu^{a} \eta^{c} \gamma_{5} \gamma_{c} D_{c} T_{bcd\mu} & 218 \\ \bar{T}^{abc} \mu^{ab} \mu^{ab} \mu^{cb} \eta^{c} f_{-f}^{-b} \gamma^{c} \gamma_{5} \gamma_{D} D_{c} T_{bcfp} + \text{H.c.} & 156 i \bar{T}^{abc} V^{b} f_{+a}^{-b} \mu^{a} \eta^{c} \gamma_{5} \gamma_{D} D_{c} T_{bcd\mu} & 218 \\ \bar{T}^{abc} \mu^{ab} \mu^{ab} \mu^{ab} \mu^{cb} \eta^{c} \gamma_{5} \gamma_{D} D_{c} T_{bcfp} + \text{H.c.} & 156 i \bar{T}^{abc} V^{b} f_{+a}^{-b} \mu^{a} \eta^{c} \gamma_{5} \gamma_{2} D_{c} T_{bcd\mu} & 218 \\ \bar{T}^{abc} \mu^{ab} \mu^{ab} \mu^{cb} \eta^{c} \gamma_{5} \gamma_{D} D_{c} T_{bcfp} + \text{H.c.} & 157 i \bar{T}^{abc} V^{b} f_{+a}^{-b} \mu^{a} \eta^{c} \gamma_{5} \gamma_{D} D_{c} T_{bcd\mu} & 218 \\ \bar{T}^{abc} \mu^{ab} \mu^{ab} \mu^{ab} \eta^{c} \eta^{c} \gamma_{5} \gamma_{D} D_{c} T_{bcfp} + \text{H.c.} & 158 i e^{ab} \sqrt{T}^{abc} T^{bcc} \eta^{c} \eta^{c} \eta^{c} \gamma_{5} \gamma_{D$	$T^{abc\mu}u_a^{\ a\nu}u_b^{\ e\lambda}f_{-d}^{\ J}{}_{\lambda}^{\rho}\gamma_5\gamma_{\rho}D_{\nu}T_{cef\mu} + \text{H.c.}$	56	145	$iT^{abc\mu}f_{+}^{aev\lambda}h_{ed}^{\rho\sigma}\gamma_{5}\gamma_{\nu}D_{\lambda\rho\sigma}T_{abc\mu}$	011	418
$ \begin{aligned} & u^{ab}\mu_{ab}^{ab}\mu^{ab'}f_{-f}e^{Ab'}\gamma_{ST}D_{J}T_{bcd\mu} + \text{H.c.} & 14' & ^{abb}\mu_{ab}^{ab}\mu_{b}^{ab}\mu_$	$T^{abc\mu}u_a^{\ \mu}u^{ej\nu}f_{-fe}^{\ \lambda\rho}\gamma_5\gamma_\nu D_\lambda T_{bcd\rho} + \text{H.c.}$		146	$iT^{abc\mu} \nabla^{\nu} f_{+a}^{\nu} {}^{\nu} u_{b}^{e\rho} \gamma_{5} \gamma_{\lambda} D_{\rho} T_{cde\mu}$	211	419
$ \begin{split} & I^{abc\mu} \mu_{ab}^{a} \mu_{b}^{abc} J^{b} J^{c}_{-f} e^{ac} \gamma_{SY} 2D_{f} b_{cdc} + \text{H.c.} & I48 & I^{abc\mu} V^{b}_{f} + u^{b} V^{b}_{f} J^{b}_{f} D_{f} de\mu & 213 & 421 \\ \hline T^{abc\mu} \mu_{ab}^{ab} u^{a}_{\mu} f^{b}_{-f} e^{f} \gamma_{SY} D_{\mu} T_{bcf\mu} + \text{H.c.} & I49 & I^{abc\mu} \nabla^{b} f^{c}_{+a} d^{b} \mu_{a}^{b} V^{b} \gamma_{SY} D_{\mu} T_{bcc\mu} + \text{H.c.} & 214 & 422 \\ \hline T^{abc\mu} \mu_{ab}^{ab} u^{a}_{a} f^{c}_{-f} e^{f} \gamma_{SY} D_{\mu} T_{bcf\mu} + \text{H.c.} & 57 & 151 & I^{abc\mu} \nabla^{b} f^{c}_{+a} d^{b} \mu_{a}^{b} V^{c} \gamma_{SY} D_{\mu} T_{bcc\mu} + \text{H.c.} & 216 & 424 \\ \hline T^{abc\mu} u^{ab} u^{a}_{a} u^{c}_{a} f^{c}_{-f} f^{b} \gamma_{SY} D_{\mu} T_{bcf\mu} + \text{H.c.} & 58 & 152 & I^{abc\mu} \nabla^{b} f^{c}_{+a} d^{b} \mu_{a}^{b} v^{c}_{SY} D_{\mu} T_{bcd\mu} & 217 \\ \hline T^{abc\mu} u^{ab} u^{a}_{a} u^{c}_{a} f^{c}_{-f} f^{b}_{\mu} \gamma_{SY} D_{\mu} T_{bcf\mu} + \text{H.c.} & 154 & I^{abc\mu} \nabla^{b} f^{c}_{+a} d^{b} \mu_{a}^{b} v^{c}_{SY} D_{\mu} T_{bcd\mu} & 217 \\ \hline T^{abc\mu} u^{ab} u^{a} u^{c}_{a} f^{c}_{-f} f^{b}_{\mu} \gamma_{SY} D_{\mu} T_{bcf\mu} + \text{H.c.} & 154 & I^{abc\mu} \nabla^{b} f^{c}_{+a} d^{b} \mu_{a}^{b} v^{c}_{SY} D_{\mu} T_{bcd\mu} & 219 \\ \hline T^{abc\mu} u^{ab} u^{a} u^{c}_{a} f^{c}_{-f} f^{b}_{\mu} \gamma_{SY} D_{\mu} T_{bcf\mu} + \text{H.c.} & 155 & I^{abc\mu} \nabla^{b} f^{c}_{+a} d^{b} \mu_{a}^{d} v^{c}_{SY} D_{\mu} T_{bcd\mu} & 219 \\ \hline T^{abc\mu} u^{ab} u^{a} u^{c}_{a} f^{c}_{-f} f^{b}_{\mu} \gamma_{SY} D_{\mu} T_{bcf\mu} + \text{H.c.} & 155 & I^{abc\mu} \nabla^{b} f^{c}_{+a} d^{b} \mu_{a}^{d} v^{c}_{SY} D_{\mu} T_{acd\mu} & 426 \\ \hline T^{abc\mu} u^{ab} u^{a} u^{c}_{a} f^{c}_{-f} f^{b}_{\mu} \gamma_{SY} D_{\mu} T_{bcf\mu} + \text{H.c.} & 157 & I^{abc\mu} \nabla^{b} f^{c}_{+a} d^{b} \mu_{a} d^{c}_{\mu} v^{c}_{SY} D_{\mu} T_{adc\mu} & 426 \\ \hline T^{abc\mu} u^{ab} u^{ab} u^{c}_{a} f^{c}_{-f} f^{b}_{\mu} \gamma_{SY} D_{\mu} T_{bcf\mu} + \text{H.c.} & 158 & i \ell^{abc} \overline{T^{abc\mu}} \nabla^{b} f^{a}_{\mu} d^{b} f^{-a}_{\mu} u^{c} f^{-a}_{\mu} u$	$T^{abc\mu}u_a^{\ a}{}_{\mu}u^{e_{J}\nu}f_{-fe}^{\ \lambda\rho}\gamma_5\gamma_{\lambda}D_{\nu}T_{bcd\rho} + \text{H.c.}$		14/	$iT^{abc\mu} \nabla^{\nu} f_{+a}^{\nu} {}^{\nu} u_{b}^{e\rho} \gamma_{5} \gamma_{\rho} D_{\lambda} T_{cde\mu}$	212	420
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	$T^{abc\mu}u_a {}^{\mu}\mu^{e_{j}\nu}f_{-fe}{}^{\mu}\gamma_5\gamma_{\lambda}D_{\rho}T_{bcd\nu} + \text{H.c.}$		148	$iT^{abc\mu}\nabla^{\nu}f_{+a}a^{\mu}\mu_{b}e_{\nu}\gamma_{5}\gamma_{\lambda}D_{\rho}T_{cde\mu}$	213	421
$ \begin{split} & I^{abc} \mu_{ab}^{abc} u_{a}^{c} y_{1}^{c} - \frac{1}{2} e^{a} y_{1}^{c} y_{1}^{c} y_{1}^{c} h_{1}^{c} h_{c}^{c} y_{1}^{c} H.C. & ISO & II^{abc} \mu_{a}^{c} y_{1}^{c} u_{1}^{c} \mu_{1}^{c} y_{1}^{c} y_{1}^{c} h_{1}^{c} h_{c}^{c} y_{1}^{c} H.C. & 2IS & 42S \\ \bar{T}^{abc} u_{a}^{ab} u_{a}^{c} t_{1}^{c} - h_{1}^{c} y_{1}^{c} y_{1}^{c} y_{1}^{c} h_{1}^{c} h_{c}^{c} \mu_{1}^{c} H.C. & SS & ISI & I\bar{T}^{abc} \mu_{a}^{d} u_{a}^{c} y_{1}^{c} y_{1}^{c} h_{1}^{c} h_{c}^{d} y_{1}^{c} h_{c}^{c} y_{1}^{c} h_{1}^{c} h_{c}^{d} y_{1}^{c} h_{c}^{c} h_{1}^{c} h_{c}^{d} y_{1}^{c} h_{c}^{c} h_{1}^{c} h_{c}^{d} y_{1}^{c} h_{c}^{c} h_{1}^{c} h_{c}^{d} y_{1}^{c} h_{c}^{c} h_{1}^{c} H.C. & ISI & I\bar{T}^{abc} \mu_{a}^{d} u_{a}^{d} y_{1}^{c} y_{1}^{c} h_{1}^{d} h_{c}^{d} h_{1}^{c} y_{1}^{c} y_{1}^{c} h_{1}^{c} h_{c}^{d} h_{1}^{d} h_{1}^{c} h_{1}^{c} y_{1}^{c} h_{1}^{c} h_{c}^{d} h_{1}^{d} h_{1}^{c} h_{1}^{c} h_{1}^{c} h_{1}^{d} h_{1}^{c} h_{1}^{c} h_{1}^{c} h_{1}^{c} h_{1}^{d} h_{1}^{c} h_{1}^{c} h_{1}^{d} h_{1}^{d} h_{1}^{c} h_{1}^{c} y_{1}^{c} h_{1}^{c} h_{1}^{d} h_{1}^{d} h_{1}^{c} h_{1}^{d} h_{1}^{d} h_{1}^{c} h_{1}^{d} h_{1}^{d} h_{1}^{d} h_{1}^{c} h_{1}^{d} h_{1}^{d} h_{1}^{d} h_{1}^{c} h_{1}^{d} h_$	$T^{abc\mu}u_a^{a\nu}u_d^{e\mu}f_{-e}^{-f\lambda\rho}\gamma_5\gamma_\lambda D_\nu T_{bcf\rho} + \text{H.c.}$		149	$iT^{abc\mu}\nabla^{\nu}f_{+a}^{\nu}\nu u_{d}^{e\rho}\gamma_{5}\gamma_{\lambda}D_{\rho}T_{bce\mu} + \text{H.c.}$	214	422
$\begin{aligned} \int_{a}^{bach} u_{a}^{bu} u_{d}^{a'} f_{-b}^{b'} v_{j}^{c} y_{j}^{c} \lambda_{j}^{b} l_{cef\mu}^{cef\mu} + \text{H.c.} & 51 & 151 & 17^{abcr} V_{j}^{b} f_{s,tr}^{b'} u_{a}^{d'} y_{j}^{c} \lambda_{j}^{b} h_{ce\mu}^{c} + \text{H.c.} & 216 & 424 \\ \hline fabcu_{a}^{du} u_{a}^{c} \lambda_{f-b}^{b'} v_{j}^{c} y_{j} \lambda_{D} \lambda_{Lcef\mu}^{c} + \text{H.c.} & 58 & 152 & i\overline{T}^{abcr} V_{j}^{b} f_{s,tr}^{b'} u_{a}^{d'} y_{j}^{c} y_{j} \lambda_{D}^{b} \lambda_{bcd\mu}^{b} & 217 \\ \hline fabcu_{a}^{du} u_{a}^{c} \lambda_{f-b}^{b'} v_{j}^{c} y_{j} \lambda_{D} \lambda_{Dcfp}^{b} + \text{H.c.} & 153 & i\overline{T}^{abcr} V_{j} f_{s,tr}^{b'} u_{a}^{d'} y_{j}^{c} y_{j} \lambda_{D}^{b} \lambda_{bcd\mu}^{b'} & 218 \\ \hline \bar{T}^{abcr} u_{a}^{du} u_{a}^{c} \lambda_{f-b}^{c} v_{j}^{c} y_{j} \lambda_{D} \lambda_{Dcfp}^{b} + \text{H.c.} & 154 & i\overline{T}^{abcr} V_{j} f_{s,tr}^{b'} u_{a}^{d'} y_{j}^{c} y_{j} \lambda_{D} T_{bcd\mu}^{b'} & 219 \\ \hline \bar{T}^{abcr} u_{a}^{du} u_{a}^{c} \lambda_{f-c}^{c} f_{j}^{a'} y_{j} y_{D} \lambda_{D} h_{cfr}^{b} + \text{H.c.} & 155 & i\overline{T}^{abcr} V_{j} f_{s,tr}^{b'} u_{a}^{d'} y_{j}^{c} y_{j} \lambda_{D} T_{abc\mu}^{b'} & 425 \\ \hline \bar{T}^{abcr} u_{a}^{du} u_{a}^{c} u_{f-c}^{c} f_{j}^{a'} y_{j} y_{D} \lambda_{D} h_{bcfr}^{b} + \text{H.c.} & 156 & i\overline{T}^{abcr} V_{j} f_{s}^{dcv} V_{j} f_{s}^{dcv} V_{a} f_{j}^{d'} y_{j} y_{D} \lambda_{T}^{b} ac\mu}^{b'} & 426 \\ \hline \bar{T}^{abcr} u_{a}^{du} u_{a}^{c} u_{f-c}^{c} f_{j}^{a'} y_{j} y_{D} \lambda_{D} h_{bcfr}^{b} + \text{H.c.} & 157 & i\overline{T}^{abcr} V_{j} f_{s}^{dcv} V_{j} f_{s}^{dcr} \lambda_{d} h_{cd}^{c} y_{j}^{c} y_{j} \lambda_{D} h_{cbc}^{c} + \text{H.c.} & 220 & 428 \\ \hline \bar{T}^{abcr} u_{a}^{du} u_{a}^{c} u_{c}^{c} f_{s}^{-c} f_{j}^{a'} y_{j} y_{D} \lambda_{D} h_{bcfr}^{c} + \text{H.c.} & 159 & ie^{\mu \lambda_{J} p} \overline{T}^{abcr} f_{s}^{d} u_{a}^{d} f_{s}^{-c} f_{a}^{b'} h_{ce}^{c} + \text{H.c.} & 221 & 429 \\ \hline \bar{T}^{abcr} u_{a}^{du} u_{a}^{c} d_{s}^{c} f_{s}^{-c} f_{j}^{a'} y_{j} y_{D} \lambda_{D} h_{bcfr}^{c} + \text{H.c.} & 161 & ie^{\mu \lambda_{J} p} \overline{T}^{abcr} f_{s}^{d} u_{a}^{c} f_{s}^{-c} f_{a}^{c} h_{ce}^{c} + \text{H.c.} & 222 & 430 \\ \hline \bar{T}^{abcr} u_{a}^{du} u_{a}^{c} d_{s}^{c} f_{s}^{-c} f_{s}^{a'} y_{j} y_{D} \lambda_{D} h_{cfr}^{c} + \text{H.c.} & 161 & ie^{\mu \lambda_{J} p} \overline{T}^{abcr} f_{s}^{d} u_{s}^{c} f_{s}^{-c} h_{s}^{c$	$T^{abc\mu}u_a^{\mu}u_d^{\mu}\mu_{f-e}^{f,\rho}\gamma_5\gamma_\lambda D_\rho T_{bcf\nu} + \text{H.c.}$	57	150	$iI^{abc\mu}\nabla^{\nu}f_{+a}^{\nu}{}^{\nu}u_{d}^{\rho}\gamma_{5}\gamma_{\rho}D_{\lambda}I_{bce\mu} + \text{H.c.}$	215	423
$\begin{split} I^{m \nu} u_a^m u_a^{m'} J b_{\nu'}^{\nu'} \gamma_5 \gamma_\rho J_1 c_{\rho} \mu + \text{H.c.} & 58 & 152 & II^{m \nu} \nabla' J_{s,+} v_{a}^{m} q_{\sigma}^{m'} \gamma_5 \gamma_h J_\rho h_{cd\mu} & 217 \\ \bar{f}^{abc} u_a^{du} u_e^{dv} f f h_{\rho}^{\lambda} \gamma_5 \gamma_{\nu} D_\lambda T_{bcf\rho} + \text{H.c.} & 153 & \bar{I}^{abc} \nabla f_{s,+} v_{a}^{\mu} d_{\sigma}^{\mu} \gamma_5 \gamma_{\rho} D_\lambda T_{bcd\mu} & 218 \\ \bar{f}^{abc} u_a^{du} u_a^{dv} f f h_{\rho}^{\mu'} \gamma_5 \gamma_{\nu} D_\lambda T_{bcf\rho} + \text{H.c.} & 154 & \bar{I}^{abc} \nabla \nabla f_{s,+} v_{a}^{\mu} d_{\sigma}^{\mu'} \gamma_5 \gamma_{\rho} D_\lambda T_{bcd\mu} & 219 \\ \bar{f}^{abc} u_a^{du} u_a^{dv} f f h_{\rho}^{\mu'} \gamma_5 \gamma_{\nu} D_\lambda T_{bcf\rho} + \text{H.c.} & 155 & \bar{I}^{abc} \nabla \nabla f_+ d_{\sigma}^{\mu'} u_{\sigma}^{\mu'} \gamma_5 \gamma_{\lambda} D_\mu T_{bcd\mu} & 426 \\ \bar{f}^{abc} u_a^{du} u_a^{dv} f f h_{\rho}^{\mu'} \gamma_5 \gamma_{\lambda} D_\mu T_{bcf\mu} + \text{H.c.} & 156 & \bar{I}^{abc} \nabla \nabla f_+ d_{\sigma}^{\lambda} u_{a} \eta_5 \gamma_5 \rho D_\lambda T_{abc\mu} & 426 \\ \bar{f}^{abc} u_a^{du} u_a^{dv} f f h_{\rho}^{\mu'} \gamma_5 \gamma_{\lambda} D_\mu T_{bcf\mu} + \text{H.c.} & 157 & \bar{I}^{abc} \nabla \nabla f_+ d_{\sigma}^{\lambda} u_{a} \eta_5 \gamma_5 \rho D_\lambda T_{abc\mu} & 427 \\ \bar{f}^{abc} u_a^{du} u_a^{dv} f f h_{\rho}^{\mu'} \gamma_5 \gamma_{\lambda} D_\mu T_{bcf\mu} + \text{H.c.} & 158 & ie^{\mu\lambda\rho} \bar{f}^{abc} \sigma f_+ d_{\mu\sigma} f h_{\sigma}^{\lambda} v_5 \gamma_{\lambda} D_\mu T_{bcf\mu} + \text{H.c.} & 158 & ie^{\mu\lambda\rho} \bar{f}^{abc} \sigma f_+ d_{\mu\sigma} f h_{\sigma}^{\lambda} v_5 \sigma h_{cd\rho} + \text{H.c.} & 220 & 428 \\ \bar{f}^{abc\mu} u_a^{du} u_a^{dv} f f h_{\rho}^{\mu'} \gamma_5 \gamma_{\lambda} D_\mu T_{bcf\mu} + \text{H.c.} & 160 & ie^{\mu\lambda\rho} \bar{f}^{abc\sigma} f_+ d_{\mu\sigma} f h_{\sigma}^{\lambda} v_{\lambda} T_{cde\rho} + \text{H.c.} & 221 & 429 \\ \bar{f}^{abc\mu} u_a^{du} u_a^{dv} f f h_{\rho}^{\mu'} \gamma_5 \gamma_{\lambda} D_\mu T_{bcf\mu} + \text{H.c.} & 161 & ie^{\mu\lambda\rho} \bar{f}^{abc\sigma} f_+ d_{\mu\sigma} f h_{\sigma}^{\lambda} v_{\lambda} T_{cde\rho} + \text{H.c.} & 224 & \\ \bar{f}^{abc\mu} u_a^{du} u_a^{dv} f_+ f h_{\rho}^{\lambda} \gamma_5 \gamma_{\lambda} D_\lambda T_{bcf\mu} + \text{H.c.} & 161 & ie^{\mu\lambda\rho} \bar{f}^{abc\sigma} f_+ d_{\mu\sigma} f h_{\sigma}^{\lambda} v_{\lambda} T_{bcd\rho} + \text{H.c.} & 224 & \\ \bar{f}^{abc\mu} u_a^{du} u_a^{dv} f f h_{\rho}^{\lambda} \gamma_5 \gamma_{\lambda} D_\lambda T_{bcf\mu} + \text{H.c.} & 163 & ie^{\mu\lambda\rho} \bar{f}^{abc\sigma} f_+ d_{\mu\sigma} h_{h}^{\delta} h_{\sigma} T_{cde\rho} + \text{H.c.} & 225 & 433 \\ \bar{f}^{abc\mu} u_a^{du} u_a^{dv} f f h_{\rho}^{\lambda} \gamma_5 \gamma_{\lambda} D_\lambda T_{bcf\mu} + \text{H.c.} & 165 & ie^{\mu\lambda\rho} \bar{f}^{abc\sigma} f_+ d_{\mu} h_{h} h_{\sigma} h_{\sigma} h_{ch} h_{$	$T^{abc\mu}u_a^{\ a\nu}u_d^{\ c}f_{-b}^{\ \rho}\gamma_5\gamma_\lambda D_\rho T_{cef\mu} + \text{H.c.}$	51	151	$iI^{abc\mu}\nabla^{\nu}f_{+a}^{abc\mu}u_{d}^{c}{}_{\nu}\gamma_{5}\gamma_{\lambda}D_{\rho}I_{bce\mu} + \text{H.c.}$	210	424
$\begin{split} & T^{abc}\mu_{a}m^{a}U^{b}_{a}J^{-}_{a}d^{c}\gamma}\gamma_{5}^{b}\nu_{5}J_{b}J_{1}bcf_{p}} + \text{H.c.} & 153 & T^{abc}\nu_{4}m^{a}\gamma_{5}\gamma_{b}D_{1}^{b}bcd\mu & 216 \\ \hline T^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\gamma}\gamma_{5}\nu_{D}J_{1}bcf_{p} + \text{H.c.} & 154 & iT^{abc}\nu_{5}\lambda^{b}\mu_{a}d^{b}\nu_{5}\lambda_{2}D_{p}T_{bc}d\mu & 219 \\ \hline T^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\gamma}\gamma_{5}\nu_{D}J_{b}T_{bcf_{1}} + \text{H.c.} & 155 & iT^{abc}\nu_{5}\lambda^{b}\mu_{a}d^{b}\nu_{6}\gamma_{5}\lambda_{D}D_{b}d_{b}\mu & 425 \\ \hline T^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\gamma}\gamma_{5}\nu_{D}J_{b}T_{bcf_{1}} + \text{H.c.} & 155 & iT^{abc}\nu_{5}\nu^{b}\mu_{4}^{b}\omega_{a}m^{c}\rho_{5}\gamma_{5}D_{D}T_{abc}\mu & 426 \\ \hline T^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\gamma}\gamma_{5}\nu_{D}J_{b}T_{bcf_{1}} + \text{H.c.} & 157 & iT^{abc}\nu_{5}\nu^{b}\mu_{4}d^{b}u_{d}c^{b}f_{-e}^{b}\nu_{5}T_{abc}\rho + \text{H.c.} & 220 & 428 \\ \hline T^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\gamma}\gamma_{5}\nu_{D}J_{b}T_{bcf_{1}} + \text{H.c.} & 159 & ie^{\mu\lambda\rho}T^{abc}f_{+a}m^{b}d_{\mu}f_{-e}^{b}\nu_{5}T_{bcep} + \text{H.c.} & 221 & 429 \\ \hline T^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\gamma}\gamma_{5}\nu_{D}J_{b}T_{bcf_{1}} + \text{H.c.} & 160 & ie^{\mu\lambda\rho}T^{abc}f_{+a}m^{b}f_{-a}d^{b}\sigma_{4}T_{bcep} + \text{H.c.} & 222 & 430 \\ \hline T^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\rho}\gamma_{5}\gamma_{p}D_{\lambda}T_{bcf_{1}} + \text{H.c.} & 161 & ie^{\mu\lambda\rho}T^{abc}f_{+a}m^{b}f_{-a}d^{b}\sigma_{\lambda}T_{bcep} + \text{H.c.} & 224 \\ \hline T^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\rho}\gamma_{5}\gamma_{p}D_{\lambda}T_{bcf_{1}} + \text{H.c.} & 162 & ie^{\mu\lambda\rho}T^{abc}f_{+a}m^{b}f_{-a}d^{b}\sigma_{\lambda}T_{bcep} + \text{H.c.} & 224 \\ \hline T^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\rho}\gamma_{5}\gamma_{p}D_{\lambda}T_{bcf_{1}} + \text{H.c.} & 163 & ie^{\mu\lambda\rho}T^{abc}f_{+a}m^{b}f_{-a}d^{b}\sigma_{\lambda}T_{bcep} + \text{H.c.} & 225 & 433 \\ \bar{T}^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}^{\dagger}\mu^{\rho}\gamma_{5}\gamma_{p}D_{\lambda}T_{bcf_{1}} + \text{H.c.} & 164 & ie^{\mu\lambda\rho}T^{abc}f_{+a}m^{b}h^{b}\sigma_{\lambda}T_{bcep} + \text{H.c.} & 226 & 434 \\ \bar{T}^{abc}\mu_{a}m^{b}u_{d}c^{k}f_{-e}f^{\delta}\gamma_{5}\gamma_{5}p_{D}T_{bcf_{1}} + \text{H.c.} & 165 & ie^{\mu\lambda\rho}T^{abc}f_{+a}m^{b}h^{b}\sigma_{\lambda}T_{bcep} + \text{H.c.} & 226 & 434 \\ \bar{T}^{abc}\mu_{a}m^{b}u^{c}h^{\delta}f_{-e}f^{\delta}\gamma_{5}\gamma_{5}p_{D}T_{bcf_{1}} + \text{H.c.} & 166 & ie^{\mu\lambda\rho}T^{abc}f_{+a}m^{b}h^{b}\sigma_{\lambda}T_{bcep} + \text{H.c.} &$	$T^{abc\mu}u_a^{\ a\nu}u_d^{\ ch}f_{-b}^{\ \rho\nu}\gamma_5\gamma_\rho D_\lambda T_{cef\mu} + \text{H.c.}$	38	152	$\frac{iI^{abc\mu}\nabla^{\nu}f_{s,+\nu}u_{a}^{ad\rho}\gamma_{5}\gamma_{\lambda}D_{\rho}I_{bcd\mu}}{\bar{r}_{abc\mu}\nabla^{\nu}f_{s,+\nu}\lambda_{a}^{d}d\rho_{\mu}D_{\mu}T_{bcd\mu}}$	217	
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	$\overline{I}^{abc\mu}u_{a}^{\mu}u^{c}_{\mu}\mu_{J-de}^{\mu}\gamma_{5}\gamma_{\nu}D_{\lambda}I_{bcf\rho} + \text{H.c.}$ $\overline{T}^{abc\mu}u_{\mu}d\nu_{\mu}e^{\lambda}f_{\mu}f_{\mu}e^{\lambda}\mu_{\mu}D_{\lambda}T_{bcf\rho} + \text{H.c.}$		153	$iI^{acr} \nabla^{i} \int_{s,+\nu} u_{a}^{r} \gamma_{5} \gamma_{\rho} D_{\lambda} I_{bcd\mu}$ $:\overline{T}_{abc\mu} \nabla^{\nu} f \qquad \lambda_{0} \dots d_{n} \dots D_{n} T$	210	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\overline{T}^{abc\mu}_{a} u_{d} u_{d} J_{-e^{\prime}} \mu^{\prime} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \Pi.C.$ $\overline{T}^{abc\mu}_{a} u_{\nu} e^{\lambda} f f \rho_{\mu} u D T + H c$		155	$T^{abc\mu} \nabla^{\nu} f^{abc\mu} f^{a$	219	425
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\overline{T} u_a u_d $J_{-e^*}\mu'\gamma_5\gamma_{\nu}D_{\rho}T_{bcf\lambda} + \Pi.C.$ $\overline{T}abc\mu_{\mu}d\nu_{\mu}e^{-f}f^{\lambda\rho}\mu_{\mu}\mu_{\nu}D_{\rho}T_{bcf\lambda} + H_{\rho}c$		155	$T_{I} = \nabla J_{+} \nabla u_{ed} \gamma_{5} \gamma_{\lambda} D_{\rho} T_{abc\mu}$ $T_{abc\mu} \nabla \nu f de \lambda_{\mu} \rho_{\mu} q D T$		425
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\bar{T} $u_a u_d v_J = e^{s} + \gamma_5 \gamma_\lambda D_\rho T_{bcf\mu} + \Pi.C.$ $\bar{T}^{abc\mu}_{\mu} dv_\mu e^{\lambda} f f \rho_\mu v_\mu D T + H c$		157	$i\mathbf{I} \forall \mathbf{V} \mathbf{J} \mathbf{V} \mathbf{U} \mathbf{d} \mathbf{\gamma} \mathbf{S} \mathbf{\rho} \mathbf{D} \mathbf{\lambda} \mathbf{I} \mathbf{a} \mathbf{b} \mathbf{\mu}$ $i \mathbf{T} \mathbf{a} \mathbf{b} \mathbf{V} \mathbf{f} \mathbf{d} \mathbf{e} \mathbf{\lambda} \mathbf{p} \mathbf{T}$		420
$\begin{split} \vec{r} & = u_a u_a u_b f_a f_a f_b f_b $	$\bar{T}^{abc\mu}_{\mu} d^{\nu}_{\mu} e^{\lambda} f f \rho_{\mu} \gamma_{c} D T + H c$		158	$T = V J_{+} = u_{edv} T_{ST\lambda} D_{\rho} I_{abc\mu}$ $i_{c} \mu \nu \lambda \rho \overline{T} abc\sigma f = d = f + e + T + + H c$	220	428
$\begin{split} \vec{r} & \vec{r} $	$\bar{T}^{abc\mu} \mu d^{\mu} \mu^{ef} f = \lambda^{\rho} \gamma_{\sigma} \gamma_{\sigma} D T = + H c$		150	$f c = f = f + a \mu \sigma J - b \nu \lambda T c de \rho + H.c.$ $i c \mu \nu \lambda \rho \overline{T} a b c \sigma f = d = f - c + H c$	220	429
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\bar{T}^{abc\mu}_{\mu} d^{\nu}_{\mu} e^{\lambda} f f \rho_{\mu} Q D T = \pm H c$		160	$f = \int f + a \mu \sigma J - d \nu \lambda T b c e \rho + \Pi C$ $i c \mu \nu \lambda \rho \overline{T} a b c \sigma f d f e T + H c$	221	430
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\bar{T} u_a u_d $J_{-e} \mu \gamma_5 \gamma_\rho D_\nu T_{bcf\lambda} + \Pi.C.$ $\bar{T}abc\mu_\mu d\nu_\mu e\lambda f f \rho_\mu \chi D T + H c$		161	$f e^{\mu\nu\lambda\rho} \bar{T} abc f d\sigma f e^{\tau} T + H c$	222	431
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\bar{T}^{abc\mu}_{\mu} d^{\nu}_{\mu} e^{\lambda} f f^{\rho}_{\mu} \chi D T + H c$		162	$i e^{\mu \lambda \rho} \bar{T}^{abc\sigma} f = f = d T + H c$	223	451
$\begin{split} \vec{T} & = V u_a - u_e^{-1} - f e^{-1} F S_{I\nu} D_\lambda T_{bcd\rho} + \text{H.c.} & 100 & i e^{-1} T^{-1} - f + \mu \sigma J_{-ed\lambda} T_{abc\rho} + \text{H.c.} & 102 \\ \vec{T}^{abc\mu} u_a^{d\nu} u_d^{e\lambda} f_{-e}^{-f} v_{\rho} \gamma_5 \gamma_{\rho} D_\lambda T_{bcf\mu} + \text{H.c.} & 164 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc\sigma} f_{+a}^{-d} u_{\mu} h_b^{e} \lambda_{\sigma} T_{cde\rho} + \text{H.c.} & 225 & 433 \\ \vec{T}^{abc\mu} u_a^{d\nu} u_d^{e\lambda} f_{-e}^{-f} \lambda^{\rho} \gamma_5 \gamma_{\nu} D_{\rho} T_{bcf\mu} + \text{H.c.} & 165 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc\sigma} f_{+a}^{-d} u_{\mu} h_d^{e} \lambda_{\sigma} T_{bce\rho} + \text{H.c.} & 226 & 434 \\ \vec{T}^{abc\mu} u_a^{d\nu} u_d^{e\lambda} f_{-e}^{-f} \lambda^{\rho} \gamma_5 \gamma_{\rho} D_{\nu} T_{bcd\rho} + \text{H.c.} & 165 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc\sigma} f_{+a}^{-d} u_{\nu} h_d^{e} \lambda_{\sigma} T_{bce\rho} + \text{H.c.} & 227 & 435 \\ \vec{T}^{abc\mu} u_a^{d\nu} u_d^{e\lambda} f_{-e}^{-f} \lambda^{\rho} \gamma_5 \gamma_{\rho} D_{\nu} T_{bcf\mu} + \text{H.c.} & 167 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc\sigma} f_{+a}^{-d} u_{\nu} h_{d}^{d} \lambda_{\sigma} T_{bcd\rho} + \text{H.c.} & 228 \\ \vec{T}^{abc\mu} u_a^{d\nu} u^{e^{f\lambda}} f_{-de\mu}^{-\rho} \gamma_5 \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \text{H.c.} & 168 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc\sigma} f_{+d}^{-d} u_{\nu} h_{ed\lambda\sigma} T_{abc\rho} + \text{H.c.} & 436 \\ \vec{T}^{abc\mu} u_a^{d\nu} u^{e^{f\lambda}} f_{-de\nu}^{-\rho} \gamma_5 \gamma_{\rho} D_{\lambda} T_{bcf\mu} + \text{H.c.} & 169 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc} \mu \sqrt{\sigma} f_{+a}^{-d} u_{\sigma} u_b^{e} \lambda_{\sigma} T_{cde\rho} & 229 & 437 \\ \vec{T}^{abc\mu} u_a^{d\nu} u^{e^{f\lambda}} f_{-de\nu}^{-\rho} \gamma_5 \gamma_{\rho} D_{\lambda} T_{bcf\mu} + \text{H.c.} & 170 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc} \mu \sqrt{\sigma} f_{+a}^{-d} u_{\sigma} u_a^{d} \lambda T_{bce\rho} + \text{H.c.} & 230 & 438 \\ \vec{T}^{abc\mu} u_a^{d\nu} u^{e^{f\lambda}} f_{-fe\mu}^{-\rho} \gamma_5 \gamma_{\lambda} D_{\nu} T_{bcf\mu} & 171 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc} \mu \sqrt{\sigma} f_{+a}^{-d} v_{\sigma} u_a^{d} \lambda T_{bce\rho} & 231 \\ \vec{T}^{abc\mu} u_a^{d\nu} u^{e^{f\lambda}} f_{-fe\mu}^{-\rho} \gamma_5 \gamma_{\lambda} D_{\nu} T_{bcd\rho} & 171 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc} \mu \sqrt{\sigma} f_{+d}^{-d} v_{\sigma} u_a^{d} \lambda T_{bcd\rho} & 231 \\ \vec{T}^{abc\mu} u_a^{d\nu} u^{e^{f\lambda}} f_{-fe\mu}^{-\rho} \gamma_5 \gamma_{\lambda} D_{\nu} T_{bcd\rho} & 172 & i e^{\mu\nu\lambda\rho} \overline{T}^{abc} \mu \sqrt{\sigma} f_{+d}^{-d} u_{\sigma} u_{\lambda} T_{bcd\rho} & 232 & 440 \\ \vec{T}^{abc\mu} u_a^{d\nu} u^{e^{f\lambda}} f_{-fe\mu}^{-\rho} \gamma_5 \gamma_{\lambda} D_{\nu} T_{bcd\rho} & 173 & \overline{T}^{abc\mu} f_{+\sigma} d^{\nu} f_{+\rho} d^{\nu} r_{\lambda} T_{cd\rho} & 232 & 440 \\ \vec{T}^{abc\mu} u_{\mu} u_{\mu} u_{\mu} d^{\nu} f_{-fe} d^{\nu} r_{\lambda} f_{-he} u^{\nu}$	$\bar{T}^{abc\mu} u^{d\nu} u^{ef} f = \lambda^{\rho} \gamma_{\sigma} \gamma_{\sigma} D_{\rho} T_{bcf\mu} + \Pi.C.$		163	$f_{E} = f_{1} = \int_{s,+\mu\sigma} J_{-a} \nu_{\lambda} I_{bcd\rho} + \Pi.C.$ $f_{c}\mu\nu\lambda\rho \bar{T}abc\sigma f de f \dots T_{a} + H_{c}$	227	432
$\begin{split} \vec{T} &= u_a u_d \vec{J} = e^{-i} \vec{T} \vec{T}$	$\bar{T}^{abc\mu}_{\mu} d^{\nu}_{\mu} e^{\lambda} f f \rho_{\mu} Q D T = \pm H c$		164	$f c = I = J + \mu\sigma J - edv\lambda I abc\rho + II.C.$ $i c \mu\nu\lambda\rho \bar{T}abc\sigma f = d = h_{c}e_{c}T = - H c$	225	433
$\begin{split} \vec{T} &= u_a u_d J_{-e^*} \gamma_5 r_\nu D_\rho T_{bcf\mu} + \text{H.c.} & 103 ie^{\nu + T} J_{+a} \mu n_d \lambda \sigma T_{bce\rho} + \text{H.c.} & 220 434 \\ \vec{T}^{abc\mu} u_a u^{ef} \mu_{f-fe} \lambda^{\rho} \gamma_5 \gamma_{\rho} D_\nu T_{bcd\rho} + \text{H.c.} & 166 ie^{\mu\nu\lambda\rho} \vec{T}^{abc} \mu_{f+a} \nu^{\sigma} h_d^{e} \lambda \sigma T_{bce\rho} + \text{H.c.} & 227 435 \\ \vec{T}^{abc\mu} u_a u^{e\lambda} f_{-e^e} \lambda^{\rho} \gamma_5 \gamma_{\rho} D_\nu T_{bcf\mu} + \text{H.c.} & 167 ie^{\mu\nu\lambda\rho} \vec{T}^{abc\sigma} f_{s,+\mu\nu} h_a \lambda \sigma T_{bcd\rho} + \text{H.c.} & 228 \\ \vec{T}^{abc\mu} u_a u^{ef\lambda} f_{-de\mu} \gamma_5 \gamma_{\nu} D_\lambda T_{bcf\rho} + \text{H.c.} & 168 ie^{\mu\nu\lambda\rho} \vec{T}^{abc\sigma} f_{+} d_{\mu\nu} h_{ed\lambda\sigma} T_{abc\rho} + \text{H.c.} & 436 \\ \vec{T}^{abc\mu} u_a u^{ef\lambda} f_{-de\nu} \gamma_5 \gamma_{\lambda} D_\rho T_{bcf\mu} + \text{H.c.} & 169 ie^{\mu\nu\lambda\rho} \vec{T}^{abc} \mu \nabla^{\sigma} f_{+a} u_{\sigma} u_b e^{\lambda} T_{cde\rho} & 229 437 \\ \vec{T}^{abc\mu} u_a u^{ef\lambda} f_{-de\nu} \gamma_5 \gamma_{\nu} D_\lambda T_{bcf\mu} + \text{H.c.} & 170 ie^{\mu\nu\lambda\rho} \vec{T}^{abc} \mu \nabla^{\sigma} f_{+a} u_{\sigma} u_d \lambda T_{bce\rho} + \text{H.c.} & 230 438 \\ \vec{T}^{abc\mu} u_a u^{ef\lambda} f_{-fe\mu} \gamma_5 \gamma_{\nu} D_\lambda T_{bcf\mu} & 110. & 171 ie^{\mu\nu\lambda\rho} \vec{T}^{abc} \mu \nabla^{\sigma} f_{s,+\nu\sigma} u_a \lambda T_{bcd\rho} & 231 \\ \vec{T}^{abc\mu} u_a u^{ef\lambda} f_{-fe\mu} \gamma_5 \gamma_{\lambda} D_\nu T_{bcd\rho} & 171 ie^{\mu\nu\lambda\rho} \vec{T}^{abc} \mu \nabla^{\sigma} f_{+d} u_{\sigma} u_{d} \lambda T_{bcd\rho} & 231 \\ \vec{T}^{abc\mu} u_a u^{ef\lambda} f_{-fe\mu} \gamma_5 \gamma_5 \eta_\nu D_\lambda T_{bcd\rho} & 172 ie^{\mu\nu\lambda\rho} \vec{T}^{abc} \mu \nabla^{\sigma} f_{+d} u_{\sigma} u_{d} \lambda T_{bcd\rho} & 231 \\ \vec{T}^{abc\mu} u_a u^{ef\lambda} f_{-fe\mu} \gamma_5 \gamma_5 \eta_\nu D_\lambda T_{bcd\rho} & 173 \vec{T}^{abc\mu} f_{+a} u^{\mu} \nu f_{+b} u^{\mu} T_{cde\lambda} & 232 440 \\ \vec{T}^{abc\mu} u_{e} u^{\mu} u_{e} v^{\mu} f_{+a} u^{\mu} v_{e} v^{\mu} f_{+b} u^{\mu} T_{cde\lambda} & 232 440 \\ \vec{T}^{abc\mu} u_{e} u^{\mu} u_{e} v^{\mu} f_{+a} u^{\mu} v_{e} v^{\mu} f_{+b} u^{\mu} T_{cde\lambda} & 232 440 \\ \vec{T}^{abc\mu} u_{\mu} u_{\mu} v^{\mu} f_{+b} u^{\mu} T_{cd\lambda} & 232 440 \\ \vec{T}^{abc\mu} u_{\mu} u^{\mu} u_{\mu} v^{\mu} f_{+b} u^{\mu} T_{cd\lambda} & 232 440 \\ \vec{T}^{abc\mu} u_{\mu} u_{\mu} v^{\mu} f_{+b} u^{\mu} T_{cd\lambda} & 232 440 \\ \vec{T}^{abc\mu} u_{\mu} u_{\mu} v^{\mu} f_{+b} u^{\mu} T_{cd\lambda} & 232 440 \\ \vec{T}^{abc\mu} u_{\mu} u_{\mu} v^{\mu} f_{+b} u^{\mu} T_{cd\lambda} & 232 $	\bar{T} u_a u_d $J_{-e} \nu \gamma 5 \gamma \rho D_\lambda T_{bcf\mu} + \Pi C$		165	$f e^{\mu\nu\lambda\rho} \bar{T}^{abc\sigma} f = d = h e^{\alpha} T + H c$	225	434
$\begin{split} \vec{T} & a^{\mu} u^{\mu} \mu^{j} - fe^{\mu} \gamma_{5} \gamma_{\lambda} D_{\nu} T_{bcd\rho} + \text{H.c.} & 100 & ie^{\mu \lambda \rho} \overline{T}^{abc} \mu_{\mu} J_{ab} u^{j} h_{bcd\rho} + \text{H.c.} & 227 & 100 \\ \vec{T}^{abc\mu} u^{a} u^{\mu} u^{a} f_{-e^{\mu}} f_{\rho} \gamma_{5} \gamma_{\rho} D_{\nu} T_{bcf\mu} + \text{H.c.} & 167 & ie^{\mu \lambda \rho} \overline{T}^{abc\sigma} f_{s,+\mu\nu} h_{a}^{j} h_{a} T_{bcd\rho} + \text{H.c.} & 228 \\ \vec{T}^{abc\mu} u^{a} u^{ef\lambda} f_{-de\mu} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \text{H.c.} & 168 & ie^{\mu \nu \lambda \rho} \overline{T}^{abc\sigma} f_{-d^{e}\mu} h_{ed\lambda\sigma} T_{abc\rho} + \text{H.c.} & 436 \\ \vec{T}^{abc\mu} u^{a} u^{u} u^{ef\lambda} f_{-de\nu} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\mu} + \text{H.c.} & 169 & ie^{\mu \nu \lambda \rho} \overline{T}^{abc} \mu \nabla^{\sigma} f_{+a}^{d} h_{\nu\sigma} u^{b} h_{e}^{\lambda} T_{cde\rho} & 229 & 437 \\ \vec{T}^{abc\mu} u^{a} u^{u} u^{ef\lambda} f_{-de\nu} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\mu} + \text{H.c.} & 170 & ie^{\mu \nu \lambda \rho} \overline{T}^{abc} \mu \nabla^{\sigma} f_{+a}^{d} h_{\nu\sigma} u^{e} h_{e}^{\lambda} T_{cde\rho} & 230 & 438 \\ \vec{T}^{abc\mu} u^{a} u^{u} u^{ef\lambda} f_{-fe\mu} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcd\rho} & 171 & ie^{\mu \nu \lambda \rho} \overline{T}^{abc} \mu \nabla^{\sigma} f_{+a}^{d} h_{\nu\sigma} u^{d} h_{\sigma}^{\lambda} T_{bcd\rho} & 231 \\ \vec{T}^{abc\mu} u^{a} u^{u} u^{ef\lambda} f_{-fe\mu} \gamma_{5} \gamma_{5} N_{\nu} D_{\lambda} T_{bcd\rho} & 172 & ie^{\mu \nu \lambda \rho} \overline{T}^{abc\mu} \mu \nabla^{\sigma} f_{+b}^{d} h_{\nu\sigma} u_{d} h_{\sigma}^{\lambda} T_{bcd\rho} & 439 \\ \vec{T}^{abc\mu} u^{d} u^{u} u^{e} h_{\sigma}^{\lambda} f_{-fe\mu} \gamma_{5} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \text{H.c.} & 173 & \overline{T}^{abc\mu} f_{+a}^{d} h_{\sigma} h_{\sigma}^{\lambda} f_{+b}^{e} h_{\sigma}^{\lambda} T_{cde\lambda} & 232 & 440 \\ \end{bmatrix}$	$\bar{T}^{abc\mu}_{\mu} d^{\nu}_{\mu} e^{f}_{f} f = \lambda^{\rho} \gamma_{e} \gamma_{e} D T + H c$		166	$f e^{\mu\nu\lambda\rho} \bar{T}^{abc} f^{bc} f^{c} d^{\sigma} h^{e} T + H c$	220	435
$\begin{split} \vec{T}^{abc\mu} u_a^{d\nu} u^{ef\lambda} f_{-de\nu} \gamma_5 \gamma_\nu D_\lambda T_{bcf\rho} + \text{H.c.} & 168 & i \epsilon^{\mu\nu\lambda\rho} \bar{T}^{abc\sigma} f_+ d^e_{\mu\nu} h_{ed\lambda\sigma} T_{abc\rho} + \text{H.c.} & 436 \\ \bar{T}^{abc\mu} u_a^{d\nu} u^{ef\lambda} f_{-de\nu} \gamma_5 \gamma_\nu D_\lambda T_{bcf\rho} + \text{H.c.} & 168 & i \epsilon^{\mu\nu\lambda\rho} \bar{T}^{abc\sigma} f_+ d^e_{\mu\nu} h_{ed\lambda\sigma} T_{abc\rho} + \text{H.c.} & 436 \\ \bar{T}^{abc\mu} u_a^{d\nu} u^{ef\lambda} f_{-de\nu} \gamma_5 \gamma_\nu D_\lambda T_{bcf\mu} + \text{H.c.} & 169 & i \epsilon^{\mu\nu\lambda\rho} \bar{T}^{abc} \mu \nabla^\sigma f_{+a}^{d} {}_{\nu\sigma} u_b^{e}{}_{\lambda} T_{cde\rho} & 229 & 437 \\ \bar{T}^{abc\mu} u_a^{d\nu} u^{ef\lambda} f_{-de\nu} \gamma_5 \gamma_\nu D_\lambda T_{bcf\mu} + \text{H.c.} & 170 & i \epsilon^{\mu\nu\lambda\rho} \bar{T}^{abc} \mu \nabla^\sigma f_{+a}^{d} {}_{\nu\sigma} u_a^{d}{}_{\lambda} T_{bce\rho} + \text{H.c.} & 230 & 438 \\ \bar{T}^{abc\mu} u_a^{d\nu} u^{ef\lambda} f_{-fe\mu} \gamma_5 \gamma_\nu D_\lambda T_{bcd\rho} & 171 & i \epsilon^{\mu\nu\lambda\rho} \bar{T}^{abc} \mu \nabla^\sigma f_{+c}^{d} {}_{\nu\sigma} u_{ed\lambda} T_{bcd\rho} & 231 \\ \bar{T}^{abc\mu} u_a^{d\nu} u^{ef\lambda} f_{-fe\mu} \gamma_5 \gamma_\lambda D_\nu T_{bcd\rho} & 172 & i \epsilon^{\mu\nu\lambda\rho} \bar{T}^{abc\mu} \mu \nabla^\sigma f_{+c}^{d} {}_{\nu\sigma} u_{ed\lambda} T_{abc\rho} & 439 \\ \bar{T}^{abc\mu} u_e^{d\nu} u_{ed}^{\nu} f_{-a}^{f\lambda\rho} \gamma_5 \gamma_\nu D_\lambda T_{bcf\rho} + \text{H.c.} & 173 & \bar{T}^{abc\mu} f_{+a}^{d\nu} u^{\rho} f_{+b}^{e\nu} \gamma^{\mu} T_{cde\lambda} & 232 & 440 \\ \end{array}$	$\bar{T}^{abc\mu}_{\mu} d^{\nu}_{\mu} e^{\lambda} f f \rho_{\nu} v D T + H c$		167	$\mu J + a \nu h d \lambda \sigma^{T} b c e \rho + \Pi c$	228	155
$\begin{split} \vec{T} & a^{\mu} u^{\mu} J^{-}_{-de\mu} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \text{H.c.} & 100 & ie^{-i\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \text{H.c.} & 100 & ie^{-i\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\mu} + \text{H.c.} & 100 & ie^{\mu\nu\lambda\rho} \bar{T}^{abc}_{\mu} \nabla^{\sigma} f_{+a}^{\nu\sigma} u_{\sigma}^{b} u_{\sigma}^{\rho} X_{cde\rho} & 229 & 437 \\ \bar{T}^{abc\mu} u_{a}^{\nu} u^{ef\lambda} f_{-de\nu}^{\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\mu} + \text{H.c.} & 170 & ie^{\mu\nu\lambda\rho} \bar{T}^{abc}_{\mu} \nabla^{\sigma} f_{+a}^{\nu\sigma} u_{d}^{\nu} X_{bce\rho} + \text{H.c.} & 230 & 438 \\ \bar{T}^{abc\mu} u_{a}^{\nu} u^{ef\lambda} f_{-fe\mu}^{\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcd\rho} & 171 & ie^{\mu\nu\lambda\rho} \bar{T}^{abc}_{\mu} \nabla^{\sigma} f_{s,+\nu\sigma} u_{a}^{\lambda} T_{bcd\rho} & 231 \\ \bar{T}^{abc\mu} u_{a}^{\nu} u^{ef\lambda} f_{-fe\mu}^{\rho} \gamma_{5} \gamma_{\lambda} D_{\nu} T_{bcd\rho} & 172 & ie^{\mu\nu\lambda\rho} \bar{T}^{abc}_{\mu} \nabla^{\sigma} f_{+}^{\nu} u_{ed\lambda} T_{abc\rho} & 439 \\ \bar{T}^{abc\mu} u^{e}_{\mu} u^{e}_{\mu} u^{e}_{\nu} f_{-a}^{\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \text{H.c.} & 173 & \bar{T}^{abc\mu} f_{+a}^{\mu} u^{e}_{\mu} T_{cde\lambda} & 232 & 440 \\ \end{split}$	$\bar{T}^{abc\mu}\mu d^{\mu}\mu^{ef\lambda}f$, $\rho_{\chi_e\chi}D_{\chi}T_{\mu}c$ + H c		168	$i \epsilon^{\mu\nu\lambda\rho} \bar{T}^{abc\sigma} f de h = T + H c$	220	436
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\overline{T}^{abc\mu}\mu d^{\mu}\mu^{ef\lambda}f$, $\rho_{\chi_e\gamma}$, D T , μ $+$ H c		169	$J + \mu \nu^{n} e d\lambda \sigma^{T} a b c \rho + 11.0.$ $i_{E} \mu \nu \lambda \rho \overline{T} a b c \nabla \sigma f d \mu e T$	229	437
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\bar{T}^{abc\mu}\mu_{a}^{d\nu}\mu^{ef\lambda}f_{abc}^{\mu}\rho\gamma_{5}\gamma_{b}D_{2}T_{c} + Hc$		170	$i \varepsilon^{\mu\nu\lambda\rho} \bar{T}^{abc} \nabla^{\sigma} f_{+} d^{\mu} u^{\rho} T_{+} + H c$	230	438
$ \frac{1}{T^{abc\mu}} u_a^{d\nu} u^{ef\lambda} f_{-fe\mu}^{\rho} \gamma_5 \gamma_\lambda D_\nu T_{bcd\rho} \qquad 172 \qquad i \varepsilon^{\mu\nu\lambda\rho} \overline{T^{abc\mu}} u^{\sigma} u_{ed\lambda} T_{bcd\rho} \qquad 439 \\ \overline{T^{abc\mu}} u^{d\nu} u_{ed}^{\nu} f_{-a}^{f\lambda\rho} \gamma_5 \gamma_\lambda D_\lambda T_{bcf\rho} + \text{H.c.} \qquad 173 \qquad \overline{T^{abc\mu}} f_{+a}^{d\nu} u^{\rho} f_{+b}^{e\nu} u^{\lambda} T_{cd\rho} \qquad 232 \qquad 440 $	$\bar{T}^{abc\mu}\mu^{d\nu}\mu^{ef\lambda}f_{c}\mu^{\rho}\gamma_{c}\nu D_{\lambda}T_{c}$		171	$i \varepsilon^{\mu\nu\lambda\rho} \overline{T}^{abc} \nabla^{\sigma} f_{a+\nu\sigma} u \overset{d}{\rightarrow} T_{bce\rho} + \Pi c$	231	
$\overline{T}^{abc\mu} u^{de}{}_{\mu} u^{de}{}_{\mu} f^{\lambda\rho}{}_{-a} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \text{H.c.} $ $173 \overline{T}^{abc\mu} f^{\lambda\rho}{}_{+a} v^{\sigma}{}_{+b} e^{\lambda} T_{cd\rho} $ $232 440$	$\bar{T}^{abc\mu} u_a^{d\nu} u^{ef\lambda} f_{em}^{\rho} \gamma_5 \gamma_5 D_c T_{bcd\rho}$		172	$i \varepsilon^{\mu\nu\lambda\rho} \bar{T}^{abc} \sqrt{\nabla^{\sigma} f} d^{e} \mu_{ab} T_{abc}$		439
	$\bar{T}^{abc\mu} u^{de}{}_{\mu} u_{ed}{}^{\nu} f_{-a}{}^{f\lambda\rho} \gamma_5 \gamma_{\nu} D_{\lambda} T_{bcf\rho} + \text{H.c.}$		173	$\bar{T}^{abc\mu}f_{+a}^{\ \ \mu}{}^{\nu}f_{+b}^{\ \ \mu}f_{+b}^{\ \ \nu}f_{+c}^{\ \ \mu}{}^{\lambda}T_{cde\lambda}$	232	440

CHIRAL LAGRANGIANS WITH DECUPLET BARYONS TO ...

TABLE V. (Continued)

$\overline{O_n^{(N_f,4)}}$	SU(2)	SU(3)	$O_n^{(N_f,4)}$	SU(2)	SU(3)
$\bar{T}^{abc\mu} u^{de}{}_{\mu} u_{ed}{}^{\nu} f_{-a}{}^{f\lambda\rho} \gamma_5 \gamma_\lambda D_{\nu} T_{bcf\rho} + \text{H.c.}$		174	$\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}f_{+b}{}^{e}{}_{\nu\lambda}T_{cde\mu}$	233	441
$\bar{T}^{abc\mu} u^{de}{}_{\mu} u^{f}{}_{d}{}^{\nu} f_{-ef}{}^{\lambda\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{abc\rho} + \text{H.c.}$		175	$\bar{T}^{abc\mu}f_{+a}{}^d{}^\nu_\mu f_{+d}{}^e{}^\lambda_\nu T_{bce\lambda}$	234	442
$\bar{T}^{abc\mu} u^{de}{}_{\mu} u^{f}{}_{d}{}^{\nu} f_{-ef}{}^{\lambda\rho} \gamma_5 \gamma_{\lambda} D_{\nu} T_{abc\rho} + \text{H.c.}$		176	$\bar{T}^{abc\mu}f_{+a}{}^{d u\lambda}f_{+d}{}^{e}{}_{\mu u}T_{bce\lambda}$		443
$\bar{T}^{abc\mu} u^{de\nu} u_{ed}{}^{\lambda} f_{-a}{}^{f}{}_{\mu}{}^{\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{bcf\rho}$		177	$\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}f_{+d}{}^{e}{}_{\nu\lambda}T_{bceu}$		444
$\bar{T}^{abc\mu} u^{de\nu} u_e^{f\lambda} f_{-fd\nu}^{\rho} \gamma_5 \gamma_\lambda D_\rho T_{abcu} + \text{H.c.}$		178	$\bar{T}^{abc\mu}f_{+a}^{\ \ \ \mu}{}^{\mu}f_{+b}^{\ \ \ e\lambda\rho}D_{\nu\lambda}T_{cde\rho}$	235	445
$\bar{T}^{abc\mu} u^{de\nu} u_e^{f\lambda} f_{-fd\nu}^{\ \rho} \gamma_5 \gamma_o D_\lambda T_{abc\mu} + \text{H.c.}$		179	$\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}f_{+b}{}^{e}{}^{\rho}D_{\lambda\rho}T_{cde\mu}$	236	446
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}f_{-d}{}^{f\rho\sigma}\gamma_5\gamma_\rho D_{\nu\lambda\sigma}T_{cef\mu} + \text{H.c.}$	59	180	$\bar{T}^{abc\mu}f_{+a}^{\ \ \mu}f_{+d}^{\ \ \nu}f_{+d}^{\ \ e\lambda\rho}D_{\nu\lambda}T_{bce\rho}$	237	447
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_d^{\ e\lambda}f_{-e}^{\ f\rho\sigma}\gamma_5\gamma_0 D_{\nu\lambda\sigma}T_{bcf\mu} + \text{H.c.}$		181	$\bar{T}^{abc\mu}f_{+a}^{\ d\nu\lambda}f_{+d}^{\ e}{}^{\ \rho}D_{\nu\rho}T_{bce\lambda}$		448
$\bar{T}^{abc\mu}u_a^{\ d}{}_{\mu}u_b^{\ e\nu}h_c^{\ f\lambda\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{defo} + \text{H.c.}$	60	182	$\bar{T}^{abc\mu}f_{+a}^{\ d\nu\lambda}f_{+d}^{\ e}{}^{\rho}D_{\lambda\rho}T_{bce\mu}$		449
$\bar{T}^{abc\mu}u_a^{\ d}{}_{\mu}u_b^{\ e\nu}h_d^{\ f\lambda\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{cef\rho} + \text{H.c.}$	61	183	$i\bar{T}^{abc\mu}f_{+a}^{\ a\ \nu}f_{+b}^{\ e\lambda\rho}\sigma_{\nu\lambda}T_{cde\rho}$	238	450
$\bar{T}^{abc\mu}u_a^{\ \ \mu}u_b^{\ e\nu}h_d^{\ f\lambda\rho}\gamma_5\gamma_\lambda D_\nu T_{cefo} + \text{H.c.}$	62	184	$i\bar{T}^{abc\mu}f_{+a}^{d}\mu^{\nu}f_{+d}^{e\lambda\rho}\sigma_{\nu\lambda}T_{bcea}$	239	451
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}h_d{}^{f\lambda\rho}\gamma_5\gamma_2 D_a T_{caf\mu} + \text{H.c.}$	63	185	$\bar{T}^{abc\mu}f_{\pm a}d_{\mu}{}^{\nu}f_{\pm \pm \nu}{}^{\lambda}T_{bcd\lambda} + \text{H.c.}$	240	
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}h_a{}^{f\lambda\rho}\gamma_5\gamma_\mu D_\lambda T_{cdfa} + \text{H.c.}$	64	186	$\bar{T}^{abc\mu}f_{+a}d^{\mu\lambda}f_{s+\mu\lambda}T_{bcd\mu}$	241	
$\bar{T}^{abc\mu}u_a^{\ d}{}_{\mu}u_b^{\ e\nu}h_e^{\ f\lambda\rho}\gamma_5\gamma_2D_{\nu}T_{cdfo} + \text{H.c.}$	65	187	$\bar{T}^{abc\mu}f_{\pm a}d_{\nu}\nu f_{s\pm}\lambda^{\rho}D_{\nu\lambda}T_{bcda} + \text{H.c.}$	242	
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}h_a{}^{f\lambda\rho}\gamma_5\gamma_1 D_a T_{cdf\mu} + \text{H.c.}$	66	188	$\bar{T}^{abc\mu}f_{+a}d^{\mu\lambda}f_{s+\mu}^{\rho}D_{\lambda\sigma}T_{bcd\mu}$	243	
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_d{}^{e\nu}h_b{}^{f\lambda\rho}\gamma_5\gamma_2D_\mu T_{cafo} + \text{H.c.}$	67	189	$i\bar{T}^{abc\mu}f_{\perp a}d_{\mu\nu}f_{\alpha}^{\lambda\rho}\sigma_{\mu\lambda}T_{bcd\alpha} + \text{H.c.}$	244	
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_d{}^{e\nu}h_a{}^{f\lambda\rho}\gamma_5\gamma_\mu D_\lambda T_{bcfa} + \text{H.c.}$		190	$\bar{T}^{abc\mu}f_{s+\mu\nu}f_{s+\nu\lambda}T_{abc\lambda}$	245	
$\bar{T}^{abc\mu}u_a{}^d_\mu u_d{}^{e\nu}h_a{}^{f\lambda\rho}\gamma_5\gamma_1D_\mu T_{bcfa} + \text{H.c.}$		191	$\bar{T}^{abc\mu}f_{s} + {}^{\nu\lambda}f_{s} + {}^{\nu\lambda}T_{abc\mu}$	246	
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_d{}^{e\nu}h_a{}^{f\lambda\rho}\gamma_5\gamma_1D_aT_{bcf\mu} + \text{H.c.}$		192	$\bar{T}^{abc\mu}f_{s,+}^{\nu}f_{s,+}^{\nu}\lambda^{\rho}D_{\mu\lambda}T_{abco}$	247	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_b^{\ e\lambda}h_d^{\ f}_{\ \mu}^{\ \rho}\gamma_5\gamma_{\nu}D_{\rho}T_{cef\lambda} + \text{H.c.}$	68	193	$\bar{T}^{abc\mu}f_{s} + {}^{\nu\lambda}f_{s} + {}^{\rho}D_{\lambda 2}T_{abc\mu}$	248	
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e}{}_{,\nu}h_d{}^{f\lambda\rho}\gamma_5\gamma_2D_aT_{caf\mu} + \text{H.c.}$	69	194	$i\bar{T}^{abc\mu}f_{s}\mu^{\nu}f_{s}\mu^{\lambda\rho}\sigma_{\nu\lambda}T_{abc\rho}$	249	
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_b^{\ e\lambda}h_d^{\ f}{}_{\mu}{}^{\rho}\gamma_5\gamma_\lambda D_{\rho}T_{cef\mu} + \text{H.c.}$	70	195	$i\bar{T}^{abc\mu}f_{+}^{de} = f_{+ed}^{\lambda\rho}\sigma_{\nu\lambda}T_{abca}$		452
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}h_d{}^{f}{}_{\nu}{}^{\rho}\gamma_5\gamma_2D_aT_{cef\mu}$ + H.c.	71	196	$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e\nu}\gamma_{\pm c}{}^fT_{daf\nu}$	250	453
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u^{ef\nu}h_{de}{}^{\lambda\rho}\gamma_5\gamma_\mu D_\lambda T_{bcfa} + \text{H.c.}$		197	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e}{}_{\nu}\gamma_{\pm}{}_{c}{}^{f}T_{defu}$	251	454
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_b^{\ e\lambda}h_d^{\ f}\nu^{\rho}\gamma_5\gamma_a D_\lambda T_{cef\mu} + \text{H.c.}$	72	198	$\bar{T}^{abc\mu}u_a^{\ \ d}u_b^{\ \ e\nu}\chi_{+d}^{\ \ f}T_{cef\mu}$ + H.c.	252	455
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_b^{\ e\lambda}h_d^{\ f}{}_{\lambda}^{\ \rho}\gamma_5\gamma_{\nu}D_aT_{cef\mu} + \text{H.c.}$	73	199	$\bar{T}^{abc\mu}u_a^d u_b^{e\nu}\chi_{+e}^f T_{cdf\nu}$ + H.c.	253	456
$\bar{T}^{abc\mu}u_{a}^{\ d}u^{af\nu}h_{de}^{\ \lambda\rho}\gamma_{5}\gamma_{\lambda}D_{\mu}T_{bcfa} + \text{H.c.}$		200	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}\chi_{+d}{}^fT_{cef\mu}$ + H.c.	254	457
$\bar{T}^{abc\mu}u_a^{\ d\nu}u_b^{\ e\lambda}h_d^{\ f}{}_{\lambda}^{\ \rho}\gamma_5\gamma_o D_{\nu}T_{cef\mu} + \text{H.c.}$	74	201	$\bar{T}^{abc\mu} u_a^{\ d}{}_{\mu} u_d^{\ e\nu} \chi_{+b}^{\ f} T_{cef\nu}$	255	458
$\bar{T}^{abc\mu}u_a{}^d{}_\mu u^{ef\nu}h_{fe}{}^{\lambda\rho}\gamma_5\gamma_\nu D_\lambda T_{bcd\rho} + \text{H.c.}$		202	$\bar{T}^{abc\mu} u_a^{\ d\nu} u_d^{\ e} {}_{\mu} \chi_{\pm b}{}^f T_{cef\nu}$	256	459
$\bar{T}^{abc\mu}u_a^{\ d}{}_{\mu}u^{ef\nu}h_{fe}{}^{\lambda\rho}\gamma_5\gamma_{\lambda}D_{\rho}T_{bcd\nu} + \text{H.c.}$		203	$\bar{T}^{abc\mu}u_a^{d\nu}u_d^{e}{}_{\nu}\chi_{+b}^{f}T_{cef\mu}$	257	460
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\mu}h_e{}^{f\lambda\rho}\gamma_5\gamma_{\lambda}D_{\nu}T_{bcf\rho} + \text{H.c.}$		204	$\bar{T}^{abc\mu}u_a{}^d{}_uu_d{}^{e\nu}\chi_{+e}{}^fT_{bcf\nu}$ + H.c.		461
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\mu}h_e{}^{f\lambda\rho}\gamma_5\gamma_{\lambda}D_{\rho}T_{bcf\nu}$ + H.c.		205	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\mu\chi_{+e}}{}^fT_{bcf\nu}$ + H.c.		462
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}h_b{}^f{}_{\nu}{}^{\rho}\gamma_5\gamma_{\rho}D_{\lambda}T_{cef\mu} + \text{H.c.}$	75	206	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\nu}\chi_{+e}{}^fT_{bcf\mu}$ + H.c.		463
$\bar{T}^{abc\mu}u_a{}^{d\nu}u^{ef}{}_{\mu}h_{de}{}^{\lambda\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{bcf\rho} + \text{H.c.}$		207	$\bar{T}^{abc\mu}u_a{}^d{}_\mu u^{ef u}\chi_{+de}T_{bcf u}$		464
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\nu}h_e{}^{f\lambda\rho}\gamma_5\gamma_\lambda D_\rho T_{bcf\mu} + \text{H.c.}$		208	$\bar{T}^{abc\mu}u_a{}^{d u}u^{ef}_{\mu}\chi_{+de}T_{bcf u}$		465
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}h_e{}^f{}_{\mu}{}^{\rho}\gamma_5\gamma_{\lambda}D_{\rho}T_{bcf\nu} + \text{H.c.}$		209	$\bar{T}^{abc\mu}u_a{}^{d u}u^{ef}{}_{ u}\chi_{+de}T_{bcf\mu}$		466
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}h_e{}^f{}_{\nu}{}^{\rho}\gamma_5\gamma_{\lambda}D_{\rho}T_{bcf\mu} + \text{H.c.}$		210	$\bar{T}^{abc\mu}u_a{}^d{}_\mu u^{ef u}\chi_{+fe}T_{bcd u}$ + H.c.		467
$\bar{T}^{abc\mu}u_a{}^{d\nu}u^{ef}{}_{\mu}h_{fe}{}^{\lambda\rho}\gamma_5\gamma_{\nu}D_{\lambda}T_{bcd\rho} + \text{H.c.}$		211	$\bar{T}^{abc\mu}u_a{}^{d u}u^{ef}{}_{ u}\chi_{+fe}T_{bcd\mu}$		468
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}h_e{}^f{}_{\nu}{}^{\rho}\gamma_5\gamma_\rho D_{\lambda}T_{bcf\mu} + \text{H.c.}$		212	$\bar{T}^{abc\mu} u^{de}{}_{\mu} u_{ed}{}^{\nu} \chi_{+a}{}^{f} T_{bcf\nu}$		469
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}h_e{}^f{}_{\lambda}{}^{\rho}\gamma_5\gamma_{\nu}D_{\rho}T_{bcf\mu} + \text{H.c.}$		213	$\bar{T}^{abc\mu} u^{de u} u_{ed u} \chi_{+a}{}^{f} T_{bcf\mu}$		470
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}h_e{}^f{}_{\lambda}{}^{\rho}\gamma_5\gamma_{\rho}D_{\nu}T_{bcf\mu}$ + H.c.		214	$ar{T}^{abc\mu} u^{de}{}_{\mu} u_e{}^{f u} \chi_{+fd} T_{abc u}$		471
$\bar{T}^{abc\mu}u_a{}^{d u}u^{ef\lambda}h_{de u}{}^{ ho}\gamma_5\gamma_{ ho}D_{\lambda}T_{bcf\mu}+\mathrm{H.c.}$		215	$ar{T}^{abc\mu}u_a{}^{d u}u_b{}^{e\lambda}\chi_{+c}{}^fD_{ u\lambda}T_{def\mu}$	258	472
$\bar{T}^{abc\mu} u^{de}{}_{\mu} u^{f}{}_{d}{}^{\nu} h_{ef}{}^{\lambda\rho} \gamma_{5} \gamma_{\nu} D_{\lambda} T_{abc\rho} + \text{H.c.}$		216	$\bar{T}^{abc\mu}u_a{}^{d u}u_b{}^{e\lambda}\chi_{+d}{}^fD_{\nu\lambda}T_{cef\mu}$ + H.c.	259	473
$\bar{T}^{abc\mu}u^{de}{}_{\mu}u^{f}{}_{d}{}^{\nu}h_{ef}{}^{\lambda\rho}\gamma_{5}\gamma_{\lambda}D_{\nu}T_{abc\rho}+\mathrm{H.c.}$		217	$\bar{T}^{abc\mu}u_a{}^{d u}u_d{}^{e\lambda}\chi_{+b}{}^fD_{\nu\lambda}T_{cef\mu}$	260	474
$\bar{T}^{abc\mu} u^{de\nu} u_e{}^{f\lambda} h_{fd\nu}{}^{\rho} \gamma_5 \gamma_{\lambda} D_{\rho} T_{abc\mu} + \text{H.c.}$		218	$\bar{T}^{abc\mu}u_a{}^{d u}u_d{}^{e\lambda}\chi_{+e}{}^fD_{\nu\lambda}T_{bcf\mu}$ + H.c.		475
$\bar{T}^{abc\mu} u^{de\nu} u_e{}^{f\lambda} h_{fd\nu}{}^{\rho} \gamma_5 \gamma_{\rho} D_{\lambda} T_{abc\mu} + \text{H.c.}$		219	$\bar{T}^{abc\mu}u_a{}^{d u}u^{ef\lambda}\chi_{+de}D_{\nu\lambda}T_{bcf\mu}$		476
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}h_d{}^{f\rho\sigma}\gamma_5\gamma_\nu D_{\lambda\rho\sigma}T_{cef\mu}+\text{H.c.}$	76	220	$ar{T}^{abc\mu}u_a{}^{d u}u^{ef\lambda}\chi_{+fe}D_{ u\lambda}T_{bcd\mu}$		477
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}h_d{}^{f\rho\sigma}\gamma_5\gamma_\lambda D_{\nu\rho\sigma}T_{cef\mu}+\text{H.c.}$	77	221	$ar{T}^{abc\mu} u^{de u} u_{ed}{}^{\lambda} \chi_{+a}{}^{f} D_{ u\lambda} T_{bcf\mu}$		478

$\overline{O_n^{(N_f,4)}}$	SU(2)	SU(3)	$O_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}h_d{}^{f ho\sigma}\gamma_5\gamma_\rho D_{\nu\lambda\sigma}T_{cef\mu} + \text{H.c.}$	78	222	$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_b{}^{e u}\chi_{+,s}T_{cde u}$	261	479
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}h_e{}^{f\rho\sigma}\gamma_5\gamma_\nu D_{\lambda\rho\sigma}T_{bcf\mu} + \text{H.c.}$		223	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^e{}_{\nu}\chi_{+,s}T_{cde\mu}$	262	480
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}h_e{}^{f\rho\sigma}\gamma_5\gamma_\lambda D_{\nu\rho\sigma}T_{bcf\mu} + \text{H.c.}$		224	$\bar{T}^{abc\mu}u_a{}^d{}_\mu u_d{}^{e\nu}\chi_{+,s}T_{bce\nu}$	263	481
$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}h_e{}^{f\rho\sigma}\gamma_5\gamma_\rho D_{\nu\lambda\sigma}T_{bcf\mu} + \text{H.c.}$		225	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e{}_{\mu}\chi_{+,s}T_{bce\nu}$	264	482
$\bar{T}^{abc\mu} u^{de\nu} u_e{}^{f\lambda} h_{fd}{}^{\rho\sigma} \gamma_5 \gamma_{\nu} D_{\lambda\rho\sigma} T_{abc\mu} + \text{H.c.}$		226	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^e_{\nu}\chi_{+,s}T_{bce\mu}$	265	483
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}{}_{\mu}u_{a}{}^{d}{}_{\nu}u_{b}{}^{e}{}_{\lambda}f_{-d}{}^{f}{}_{\rho}{}^{\sigma}T_{cef\sigma} + \text{H.c.}$	79	227	$\bar{T}^{abc\mu}u^{de}{}_{\mu}u_{ed}{}^{\nu}\chi_{+,s}T_{abc\nu}$		484
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_a^{\ d}_{\ \nu}u_d^{\ e}_{\ \lambda}f_{-b}^{\ f}_{\ \rho}^{\ \sigma}T_{cef\sigma} + \text{H.c.}$	80	228	$\bar{T}^{abc\mu} u^{de u} u_{ed u} \chi_{+,s} T_{abc\mu}$		485
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_a^{\ d}_{\ \nu}u_d^{\ e}_{\ \lambda}f_{-e}^{\ f}_{\ \rho}^{\ \sigma}T_{bcf\sigma} + \text{H.c.}$		229	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_b{}^{e\lambda}\chi_{+,s}D_{\nu\lambda}T_{cde\mu}$	266	486
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_a^{\ d}_{\ \nu}u^{ef}_{\ \lambda}f_{-be\rho}^{\ \sigma}T_{cdf\sigma}^{\ }+\mathrm{H.c.}$	81	230	$\bar{T}^{abc\mu}u_a{}^{d\nu}u_d{}^{e\lambda}\chi_{+,s}D_{\nu\lambda}T_{bce\mu}$	267	487
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_a^{\ d}_{\ \nu}u_b^{\ e\sigma}f_{-c}^{\ f}_{\ \lambda\rho}T_{def\sigma} + \text{H.c.}$	82	231	$\bar{T}^{abc\mu} u^{de\nu} u_{ed}^{\lambda} \chi_{+,s} D_{\nu\lambda} T_{abc\mu}$		488
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_a^{\ d}_{\ \nu}u^{ef}_{\ \lambda}f_{-de\rho}^{\ \sigma}T_{bcf\sigma} + \mathrm{H.c.}$		232	$\bar{T}^{abc\mu}f_{-a}{}^{d\nu\lambda}\chi_{+d}{}^{e}\gamma_{5}\gamma_{\nu}D_{\lambda}T_{bce\mu}$ + H.c.	268	489
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_a^{\ d}_{\ \nu}u_b^{\ e\sigma}f_{-d}^{\ f}_{\ \lambda\rho}T_{cef\sigma} + \text{H.c.}$	83	233	$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}\chi_{+d}{}^e\gamma_5\gamma_{\nu}D_{\lambda}T_{bce\mu}$ + H.c.	269	490
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_a^{\ d}_{\ \nu}u_b^{\ e\sigma}f_{-e}^{\ f}_{\ \lambda\rho}T_{cdf\sigma} + \text{H.c.}$	84	234	$\bar{T}^{abc\mu}u_a{}^{d\nu}\nabla^{\lambda}\chi_{+d}{}^e\gamma_5\gamma_{\lambda}D_{\nu}T_{bceu}$ + H.c.	270	491
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\mu}u_{a}^{d}_{\nu}u^{ef}_{\lambda}f_{-fe\rho}^{\sigma}T_{bcd\sigma}^{\sigma}$ + H.c.		235	$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}f_{-a}^{\ d}_{\ \nu\lambda}\chi_{+d}^{\ e}T_{bce\rho}$ + H.c.	271	492
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_a^{\ d}_{\ \nu}u_b^{\ e\sigma}f_{-d}^{\ f}_{\ \lambda\sigma}T_{cef\rho} + \text{H.c.}$	85	236	$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\mu}u_{a}^{d}_{\nu}\nabla_{\lambda}\chi_{+d}^{e}T_{bce\rho} + \text{H.c.}$	272	493
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_{a}^{\ d}_{\ \nu}u_{d}^{\ e\sigma}f_{-b}^{\ f}_{\ \lambda\rho}T_{cef\sigma} + \text{H.c.}$	86	237	$\bar{T}^{abc\mu} \nabla^{\nu} \nabla_{\nu} \chi_{+a}^{d} T_{bcd\mu}$	273	494
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_{a}^{\ d}_{\ \nu}u_{d}^{\ e\sigma}f_{-e}^{\ f}_{\ \lambda\rho}T_{bcf\sigma}^{\ bcf\sigma} + \text{H.c.}$		238	$\bar{T}^{abc\mu}\nabla^{\nu}\nabla_{\mu}\chi_{+s}T_{abc\mu}$	274	495
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_{a}^{\ d}_{\ \nu}u_{d}^{\ e\sigma}f_{-e}^{\ f}_{\ \lambda\sigma}T_{bcfo} + \text{H.c.}$		239	$i\bar{T}^{abc\mu}f_{+a}^{\ \mu\nu}\chi_{+b}^{\ \mu\nu}T_{cde\nu}$	275	496
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\ \mu}u_{a}^{\ d}_{\ \nu}u^{ef\sigma}f_{-be}_{\ a}T_{cdf\sigma} + \text{H.c.}$	87	240	$i\bar{T}^{abc\mu}f_{\pm a}^{\ \mu}\gamma_{\pm a}^{\ \nu}\gamma_{\pm a}^{\ e}T_{bca\mu}$ + H.c.	276	497
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\mu}u_{a}^{d}u_{a}^{ef\sigma}f_{-dalo}T_{bcf\sigma} + \text{H.c.}$		241	$i\bar{T}^{abc\mu}f_{s+\mu\nu}\gamma_{+a}^{d}T_{bcd\nu}$	277	
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\mu\nu\alpha}u_{\alpha}^{d}u_{\alpha}^{ef\sigma}f_{-fabc}T_{bcd\sigma} + \text{H.c.}$		242	$i\bar{T}^{abc\mu}f^{b}_{\mu}de^{\nu}\gamma_{b}dT_{abc\mu}$		498
$\epsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}$ \mathcal{U}^{de} \mathcal{U}^{abc} $f_{abc}\sigma T_{bab}$ + H.c.		243	$i\bar{T}^{abc\mu}f_{+a}d_{\mu}\gamma_{+a}T_{bad\mu}$	278	499
$\epsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$, μ^{de} , μ^{f} , f		244	$i\overline{T}^{abc\mu}f_{a+\mu\nu}\nu_{\mu}\tau_{a+\nu}\tau_{a+\mu\nu}$	279	
$\epsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}_{abc}$, $\mu_{a}^{d\sigma}\mu_{d}^{e}$, $f_{ab}^{f}_{abc}T_{bof}_{abc}$ + H.c.		245	$\bar{T}^{abc\mu}\gamma_{+a}d\gamma_{+b}e^{T}T_{aday}$	280	500
$\varepsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$, μ^{de} , $\mu_{ad}^{\sigma}f$, f^{bc} , T_{bcf} , H_{cc}		246	$\bar{T}^{abc\mu}\gamma_{+}d\gamma_{+}d^{e}T_{back}$	281	501
$\epsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$ μ^{de} μ^{de} $\mu^{af\sigma}f$ $_{ad\lambda\rho}T_{bcf\sigma}$ + H.c.		247	$\bar{T}^{abc\mu} \chi_{+a} \chi_{+a} \bar{T}^{bce\mu}$		502
$\epsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$, $\mu e^{d\sigma}\mu^{ef}$, f_{abc} , T_{bab} + H.C.		248	$\bar{T}^{abc\mu}\gamma_{+} d\gamma_{+} T_{bcd\nu}$	282	503
$\varepsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$, μ_{a}^{d} , μ_{b}^{e} , h_{a}^{f} , σT_{abc} + H.C.	88	249	$\bar{T}^{abc\mu} \chi_{+a} \chi_{+,s} = bca\mu$	283	504
$\varepsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$, μ_{a}^{d} , μ_{a}^{e} , h_{b}^{f} , σT_{abc} + H.C.	89	250	$i\overline{T}^{abc\mu}\mu_{\mu}^{d\nu}\mu_{\mu}^{e\lambda}\gamma_{\mu}f^{\gamma}\gamma_{\nu}D_{\nu}T_{\mu\nu}f_{\mu} + H_{\nu}c_{\nu}$	284	505
$\epsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$, μ_{a}^{d} , μ_{a}^{e} , h_{a}^{f} , σT_{bafz} + H.c.		251	$i\overline{T}^{abc\mu}\mu_{\alpha}^{d\nu}\mu_{b}^{e\lambda}\gamma_{\alpha}f^{\prime}\gamma_{5}\gamma_{2}D_{\alpha}T_{acf\mu} + \text{H.c.}$	285	506
$\varepsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$, μ_{a}^{d} , μ^{ef} , $h_{dac}\sigma T_{bac}$ + H.C.		252	$i\overline{T}^{abc\mu}\mu_{\mu}^{d\nu}\mu_{\mu}^{e\lambda}\gamma_{\mu}^{b}\gamma_{\mu}\gamma_{\nu}T_{\mu}\gamma_{\nu}T_{\mu}\gamma_{\mu}+H_{\mu}C_{\mu}$	286	507
$\varepsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$, u_{a}^{d} , u^{ef}_{a} , $h_{foo}\sigma T_{bod}$ + H.c.		253	$i\overline{T}^{abc\mu}\mu_{a}^{d\nu}\mu_{d}^{e\lambda}\gamma_{a}^{f}\gamma_{5}\gamma_{\nu}D_{3}T_{bafu} + \text{H.c.}$		508
$\epsilon^{\mu\nu\lambda\rho}\overline{T}^{abc}$, μ_{a}^{d} , $\mu_{b}^{e\sigma}h_{a}^{f}$, $T_{cofo} + \text{H.c.}$	90	254	$i\overline{T}^{abc\mu}\mu_{a}^{d\nu}\mu_{d}^{e\lambda}\gamma_{a}^{f}\gamma_{5}\gamma_{2}D_{c}T_{bcf\mu} + \text{H.c.}$		509
$\varepsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}{}_{\mu}u_{a}{}^{d}{}_{\nu}u_{d}{}^{e\sigma}h_{e}{}^{f}{}_{\lambda\sigma}T_{befa} + \text{H.c.}$		255	$i\bar{T}^{abc\mu}u_a^{d\nu}u^{ef\lambda}\gamma_{-de}\gamma_5\gamma_{\nu}D_{\lambda}T_{bcf\mu}$ + H.c.		510
$\bar{T}^{abc\mu}f_{-a}^{d} \nu f_{-b}^{e} \lambda T_{cde\lambda}$	91	256	$i\bar{T}^{abc\mu}u^{de\nu}u_e^{f\lambda}\gamma_{-fd}\gamma_5\gamma_{\nu}D_{\lambda}T_{abc\mu}$ + H.c.		511
$\bar{T}^{abc\mu}f_{-a}^{d\nu\lambda}f_{-b}^{e}{}_{\nu\lambda}T_{cde\mu}$	92	257	$i\bar{T}^{abc\mu}u_{a}{}^{d\nu}u_{d}{}^{e\lambda}\gamma_{-s}\gamma_{5}\gamma_{\mu}D_{2}T_{bca\mu}$ + H.c.	287	512
$\bar{T}^{abc\mu}f_{-a}d^{\nu}f_{-d}e^{\lambda}T_{bca}$	93	258	$i\epsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{a}\mu_{a}^{d}\mu_{b}^{e}_{\lambda}\gamma_{-}f^{f}T_{cafe} + \text{H.c.}$	288	513
$\bar{T}^{abc\mu} f_{-a}^{d\nu\lambda} f_{-d}^{e} \dots T_{bca}$	94	259	$i\epsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}{}_{\mu}u_{a}{}^{d}{}_{\nu}u_{d}{}^{e}{}_{\lambda}\gamma_{-b}{}^{f}T_{cafo}$	289	514
$\bar{T}^{abc\mu}f^{abc\mu}f^{abc\mu}f^{abc\mu}f^{bc\mu}$	95	260	$i\epsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}$, μ_{a}^{d} , μ_{a}^{e} , $\gamma_{a}^{f}T_{bafa}$ + H.c.		515
$\bar{T}^{abc\mu}f^{de}\mu^{\nu}f^{abc\mu}f^{bc}$		261	$i\epsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}$, μ_{a}^{d} , $\mu^{ef}_{a}\gamma_{d}$, T_{befa}		516
$\bar{T}^{abc\mu}f^{de\nu\lambda}f^{abc\mu}$		262	$i \varepsilon^{\mu\nu\lambda\rho} \bar{T}^{abc} u^{de} u^{f} \gamma f^{abc}$		517
$\bar{T}^{abc\mu}f d^{\nu}f e^{\lambda\rho}D_{\lambda}T$	96	263	$i \varepsilon^{\mu\nu\lambda\rho} \bar{T}^{abc} , u^{d} , u^{e} , \chi - J a^{c} abc\rho$	290	518
$\bar{T}^{abc\mu}f_{a}d^{\nu\lambda}f_{b}e^{\rho}D_{\lambda}T_{aday}$	97	264	$i\bar{T}^{abc\mu}f = d^{\mu\nu}\gamma d^eT_{back} + \text{H.c.}$	291	519
$\bar{T}^{abc\mu} f_{-a} d^{\mu} f_{-d} f_{-d} e^{\lambda \rho} D_{\mu \lambda} T_{bcac}$	98	265	$i\bar{T}^{abc\mu}h_a^{d\mu\nu}\gamma_{-b}^{e}T_{cdc\nu}$	292	520
$\bar{T}^{abc\mu}f_{-a}^{d\nu\lambda}f_{-d}^{e}, p_{\nu}D_{\nu\alpha}T_{bca}$	99	266	$i\bar{T}^{abc\mu}h_a^{d\mu\nu}\gamma_{-d}^{e}T_{bca\mu}$ + H.c.	293	521
$\bar{T}^{abc\mu}f_{-a}^{d\nu\lambda}f_{-a}^{e} \stackrel{\rho}{}_{\mu}D_{\lambda\alpha}T_{b\alpha\alpha\alpha}$	100	267	$i\bar{T}^{abc\mu}h^{de}\mu^{\nu}\gamma_{-ad}T_{abc\mu}$		522
$\bar{T}^{abc\mu}f^{de\mu\nu}f^{\lambda\rho}D_{\mu\lambda}T_{abca}$		268	$i\bar{T}^{abc\mu}h_a^{d\nu\lambda}\gamma_{-b}{}^eD_{\nu\lambda}T_{adam}$	294	523
$\bar{T}^{abc\mu} f^{dev\lambda} f^{adv\lambda} f^{adv\mu} D_{\lambda \sigma} T^{abc\mu}$		269	$i\bar{T}^{abc\mu}h_a^{d\nu\lambda}\gamma_{-d}^{\ e}D_{\mu\lambda}T_{bca\mu}$ + H.c.	295	524
$J = J - eav \sim \lambda \rho + abc\mu$			$a - a - \nu h - b ce \mu + 11.0$		

$\overline{O_n^{(N_f,4)}}$	SU(2)	SU(3)	$O_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$i\bar{T}^{abc\mu}f_{-a}{}^{d}{}^{\nu}f_{-b}{}^{e\lambda\rho}\sigma_{\nu\lambda}T_{cde\rho}$	101	270	$i \bar{T}^{abc\mu} h^{dev\lambda} \chi_{-ed} D_{\nu\lambda} T_{abc\mu}$		525
$i\bar{T}^{abc\mu}f_{-a}{}^{d}{}^{\nu}f_{-d}{}^{e\lambda\rho}\sigma_{\nu\lambda}T_{bce\rho}$	102	271	$i\bar{T}^{abc\mu}h_a^{\ d\ \nu}\chi_{-s}T_{bcd\nu}$	296	526
$i\bar{T}^{abc\mu}f_{-}^{de}{}^{\nu}f_{-ed}{}^{\lambda\rho}\sigma_{\nu\lambda}T_{abc\rho}$		272	$i\bar{T}^{abc\mu}h_a^{d\nu\lambda}\chi_{s}D_{\nu\lambda}T_{bcd\mu}$	297	527
$\bar{T}^{abc\mu}h_a{}^d{}^\nu f_{-b}{}^e{}^\lambda T_{cde\lambda} + \text{H.c.}$	103	273	$i\bar{T}^{abc\mu}u_a{}^{d\nu}\nabla_{\nu}\chi_{-b}{}^eT_{cdeu}$	298	528
$\bar{T}^{abc\mu}h_a d^{\mu}_{\mu} f_{-d} e^{\lambda}_{\nu} T_{bce\lambda} + \text{H.c.}$	104	274	$i\bar{T}^{abc\mu}u_a{}^{d\nu}\nabla_{\nu}\chi_{-d}{}^eT_{bce\mu}$ + H.c.	299	529
$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}f_{-d}{}^e{}_{\mu\nu}T_{bce\lambda} + \text{H.c.}$	105	275	$i\bar{T}^{abc\mu}u^{de u} abla_{ u}\chi_{-ed}T_{abcu}$		530
$\bar{T}^{abc\mu}h^{de}{}_{\mu}{}^{\nu}f_{-ed\nu}{}^{\lambda}T_{abc\lambda}$ + H.c.		276	$i\bar{T}^{abc\mu}u_a{}^{d\nu} abla_{\nu}\chi_{s}T_{bcd\mu}$	300	531
$\bar{T}^{abc\mu}h_a^{\ d}{}_{\mu}{}^{\nu}f_{-b}{}^{e\lambda\rho}D_{\nu\lambda}T_{cde\rho} + \text{H.c.}$	106	277	$\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}\chi_{-b}{}^e\gamma_5\gamma_{\nu}D_{\lambda}T_{cdeu}$	301	532
$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}f_{-b}{}^e{}_^\rho D_{\lambda\rho}T_{cde\mu}$	107	278	$\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}\chi_{-d}{}^{e}\gamma_{5}\gamma_{\nu}D_{\lambda}T_{bce\mu}$ + H.c.	302	533
$\bar{T}^{abc\mu}h_a{}^d{}_^\nu f_{-d}{}^{e\lambda\rho}D_{\nu\lambda}T_{bce\rho} + \text{H.c.}$	108	279	$\bar{T}^{abc\mu}f_{s,+}^{\ \nu\lambda}\chi_{-a}^{\ d}\gamma_5\gamma_{\nu}D_{\lambda}T_{bcd\mu}$	303	
$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}f_{-d}{}^e{}_{\mu}{}^ ho D_{\nu\lambda}T_{bce ho} + \text{H.c.}$	109	280	$\bar{T}^{abc\mu}f_{+}^{de u\lambda}\chi_{-ed}\gamma_{5}\gamma_{\nu}D_{\lambda}T_{abc\mu}$		534
$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}f_{-d}{}^e{}_{\nu}{}^ ho D_{\lambda ho}T_{bce\mu} + \text{H.c.}$	110	281	$\bar{T}^{abc\mu}f_{+a}{}^{d\nu\lambda}\chi_{-,s}\gamma_5\gamma_{\nu}D_{\lambda}T_{bcd\mu}$	304	535
$\bar{T}^{abc\mu}h^{de}{}_{\mu}{}^{\nu}f_{-ed}{}^{\lambda\rho}D_{\nu\lambda}T_{abc\rho} + \text{H.c.}$		282	$\bar{T}^{abc\mu}f_{s,+}{}^{\nu\lambda}\chi_{-,s}\gamma_5\gamma_{\nu}D_{\lambda}T_{abc\mu}$	305	
$\bar{T}^{abc\mu}h^{de\nu\lambda}f_{-ed\nu}^{\ \ ho}D_{\lambda ho}T_{abc\mu}$		283	$\epsilon^{\mu\nu\lambda ho}\bar{T}^{abc}_{\ \mu}f_{+a}^{\ d}_{\ \nu\lambda}\chi_{-b}^{\ e}T_{cde ho}$	306	536
$i\bar{T}^{abc\mu}h_a{}^d{}_^\nu f_{-d}{}^{e\lambda ho}\sigma_{\nu\lambda}T_{bce ho} + \text{H.c.}$	111	284	$\varepsilon^{\mu\nu\lambda\rho} \bar{T}^{abc}_{\mu} f_{+a}^{\ \ \ }_{\nu\lambda} \chi_{-d}^{\ \ e} T_{bce\rho} + \text{H.c.}$	307	537
$\bar{T}^{abc\mu}h_a{}^d{}_^\nu h_b{}^e{}_^\lambda T_{cde\lambda}$	112	285	$\epsilon^{\mu u\lambda ho} \bar{T}^{abc}_{\ \mu} f_{s,+ u\lambda} \chi_{-a}{}^d T_{bcd ho}$	308	
$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}h_b{}^e{}_{\nu\lambda}T_{cde\mu}$	113	286	$\epsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\mu}f^{\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $		538
$\bar{T}^{abc\mu}h_a{}^d{}_^\nu h_d{}^e{}_^\lambda T_{bce\lambda}$	114	287	$\epsilon^{\mu u\lambda ho} \bar{T}^{abc}_{\mu} f_{+a}^{d}_{\nu\lambda} \chi_{-,s} T_{bcd ho}$	309	539
$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}h_d{}^e{}_{\nu\lambda}T_{bce\mu}$	115	288	$\epsilon^{\mu\nu\lambda\rho}\bar{T}^{abc}_{\mu}f_{s,+\nu\lambda}\chi_{-,s}T_{abc\rho}$	310	
$\bar{T}^{abc\mu}h^{de}{}_{\mu}{}^{\nu}h_{ed\nu}{}^{\lambda}T_{abc\lambda}$		289	$\bar{T}^{abc\mu}\chi_{-a}{}^d\chi_{-b}{}^eT_{cde\mu}$	311	540
$\bar{T}^{abc\mu}h^{de u\lambda}h_{ed u\lambda}T_{abc\mu}$		290	$\bar{T}^{abc\mu}\chi_{-a}{}^d\chi_{-d}{}^eT_{bce\mu}$		541
$\bar{T}^{abc\mu}h_a{}^d{}_^\nu h_b{}^{e\lambda ho}D_{\nu\lambda}T_{cde ho}$	116	291	$\bar{T}^{abc\mu}\chi_{-}^{de}\chi_{-ed}T_{abc\mu}$		542
$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}h_b{}^e{}_{\nu}{}^{ ho}D_{\lambda\rho}T_{cde\mu}$	117	292	$\bar{T}^{abc\mu}\chi_{-a}{}^d\chi_{-s}T_{bcd\mu}$	312	543
$\bar{T}^{abc\mu}h_a{}^d{}_^ u h_d{}^{e\lambda ho}D_{ u\lambda}T_{bce ho}$	118	293	$\bar{T}^{abc\mu}\langle F_{L\mu}{}^{\nu}F_{L\nu}{}^{\lambda}\rangle T_{abc\lambda} + \text{H.c.}$	313	544
$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}h_d{}^e{}_{\nu}{}^{ ho}D_{\lambda\rho}T_{bce\mu}$	119	294	$\bar{T}^{abc\mu} \langle F_L^{\nu\lambda} F_{L\nu\lambda} \rangle T_{abc\mu} + \text{H.c.}$	314	545
$\bar{T}^{abc\mu}h^{de}{}_{\mu}{}^{ u}h_{ed}{}^{\lambda ho}D_{ u\lambda}T_{abc ho}$		295	$\bar{T}^{abc\mu}\langle F_{L\mu}{}^{\nu}F_{L}{}^{\lambda\rho}\rangle D_{\nu\lambda}T_{abc\rho} + \text{H.c.}$	315	546
$ar{T}^{abc\mu}h^{de u\lambda}h_{ed u}{}^ ho D_{\lambda ho}T_{abc\mu}$		296	$\bar{T}^{abc\mu}\langle F_L^{\nu\lambda}F_{L\nu}^{ ho}\rangle D_{\lambda\rho}T_{abc\mu} + \text{H.c.}$	316	547
$\bar{T}^{abc\mu}h_a{}^{d u\lambda}h_b{}^{e ho\sigma}D_{ u\lambda ho\sigma}T_{cde\mu}$	120	297	$ar{T}^{abc\mu}\langle\chi\chi^{\dagger} angle T_{abc\mu}$	317	548
$\bar{T}^{abc\mu}h_a{}^{d\nu\lambda}h_d{}^{e\rho\sigma}D_{\nu\lambda\rho\sigma}T_{bce\mu}$	121	298	$\bar{T}^{abc\mu} \det \chi T_{abc\mu} + \text{H.c.}$	318	

TABLE VI. Terms in the $\mathcal{O}(p^3)$ meson-octet-decuplet and $\pi N\Delta$ chiral Lagrangians, where $P_n^{(N_f,3)}$ is defined in Eqs. (64) and (66). For the SU(2) case, the form needs to be changed; see the sentences around Eq. (67).

$\overline{P_n^{(N_f,3)}}$	SU(2)	SU(3)	$P_n^{(N_f,3)}$	SU(2)	SU(3)
$\overline{\epsilon^{abc}\bar{B}_a}^d u_b{}^{e\mu} u_c{}^f{}_{\mu} u_e{}^{g\nu} T_{A.n.dfa\nu}$	1	1	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} f_{-e}{}^{f\nu\lambda} \gamma_5 \gamma_{\nu} D_{\lambda} T_{A.n.cdfu}$		36
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_d{}^g{}_\mu T_{A,n,efq\nu}$	2	2	$\epsilon^{abc} \bar{B}_a{}^d u^{ef\mu} f_{-be}{}^{\nu\lambda} \gamma_5 \gamma_\mu D_\nu T_{A,n,cdf\lambda}$		37
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^g{}_\mu T_{A,n,dfq\nu}$		3	$\epsilon^{abc} \bar{B}_a{}^d u^{ef\mu} f_{-be}{}^{\nu\lambda} \gamma_5 \gamma_{\nu} D_{\mu} T_{A,n,cdf\lambda}$		38
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_e{}^g{}_\nu T_{A,n,dfq\mu}$	3	4	$\epsilon^{abc} \bar{B}_a{}^d u^{ef\mu} f_{-be}{}^{\nu\lambda} \gamma_5 \gamma_{\nu} D_{\lambda} T_{A,n,cdf\mu}$		39
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu} u_d{}^f{}_\mu u_e{}^{g\nu}T_{A,n,cfg\nu}$		5	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} h_c{}^{f\nu\lambda} \gamma_5 \gamma_\mu D_\nu T_{A,n,def\lambda}$	15	40
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} u_e{}^g{}_\mu T_{A,n,cfg\nu}$		6	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} h_d{}^{f\nu\lambda} \gamma_5 \gamma_\mu D_\nu T_{A,n,cef\lambda}$	16	41
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} u_e{}^g{}_\nu T_{A,n,cfq\mu}$		7	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} h_e{}^{f\nu\lambda} \gamma_5 \gamma_\mu D_\nu T_{A,n,cdf\lambda}$		42
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^f{}_\mu u_f{}^{g\nu}T_{A,n,cdq\nu}$		8	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} h_e{}^{f\nu\lambda} \gamma_5 \gamma_\nu D_\mu T_{A,n,cdf\lambda}$		43
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} u_f{}^g{}_\mu T_{A,n,cdg\nu}$		9	$\varepsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e}{}_{\mu}f_{-c}{}^{f}{}_{\nu\lambda}T_{A,n,def\rho}$	17	44
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} u_f{}^g{}_{\nu} T_{A.n.cdau}$		10	$\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e}{}_{u}f_{-d}{}^{f}{}_{\nu\lambda}T_{A.n.cef\rho}$	18	45
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_d{}^{g\lambda} D_{\mu\lambda} T_{A,n,efq\nu}$	4	11	$\varepsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e}{}_{\mu}f_{-e}{}^{f}{}_{\nu\lambda}T_{A,n,cdf\rho}$		46
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}D_{\mu\nu}T_{A,n,dfg\lambda}$	5	12	$\varepsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_a{}^d u^{ef}{}_{\mu}f_{-be\nu\lambda}T_{A,n,cdf\rho}$		47

TABLE	VI.	(Continued)
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$\overline{P_n^{(N_f,3)}}$	SU(2)	<i>SU</i> (3)	$P_n^{(N_f,3)}$	SU(2)	SU(3)
$\overline{\epsilon^{abc}\bar{B}_a}^d u_b^{\ e\mu} u_c^{\ f\nu} u_e^{\ g\lambda} D_{\mu\lambda} T_{A,n,dfa\nu}$		13	$\epsilon^{abc} \bar{B}_a{}^d \nabla^{\mu} f_{-b}{}^e{}_{\mu}{}^{\nu} T_{A.n.cde\nu}$	19	48
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}D_{\nu\lambda}T_{A,n,dfq\mu}$	6	14	$i\epsilon^{abc}\bar{B}_a{}^d\nabla^\mu f_{-b}{}^{e\nu\lambda}\sigma_{\mu\nu}T_{A.n.cde\lambda}$	20	49
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} u_e{}^{g\lambda} D_{\mu\nu} T_{A,n,cfa\lambda}$		15	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu\nu}u_{c}{}^{f}{}_{\mu}T_{A.n.def\nu}$	21	50
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} u_e{}^{g\lambda} D_{\mu\lambda} T_{A,n,cfq\nu}$		16	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu\nu}u_d{}^f{}_{\mu}T_{A,n,cef\nu}$	22	51
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} u_e{}^{g\lambda} D_{\nu\lambda} T_{A,n,cfau}$		17	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu\nu}u_{e}{}^{f}{}_{\mu}T_{A.n.cdf\nu}$		52
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} u_f{}^{g\lambda} D_{\mu\nu} T_{A,n,cda\lambda}$		18	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}u_{beu}T_{A.n.cdf u}$		53
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}u_f{}^{g\lambda}D_{\mu\lambda}T_{A,n,cdq\nu}$		19	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}D_{\mu\lambda}T_{A.n.def u}$	23	54
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}u_f{}^{g\lambda}D_{\nu\lambda}T_{A,n,cdq\mu}$		20	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_d{}^{f\lambda}D_{\mu\lambda}T_{A,n,cef u}$	24	55
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_d{}^{g\lambda}\sigma_{\mu\nu}T_{A,n,efg\lambda}$	7	21	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_e{}^{f\lambda}D_{\mu\lambda}T_{A.n.cdf u}$		56
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}\sigma_{\mu\nu}T_{A,n,dfa\lambda}$	8	22	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu\nu}u_{be}{}^{\lambda}D_{\mu\lambda}T_{A,n,cdf\nu}$		57
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}\sigma_{\mu\lambda}T_{A,n,dfa\nu}$		23	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} u_c{}^{f\lambda} \sigma_{\mu\nu} T_{A,n,def\lambda}$	25	58
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}\sigma_{\mu\nu}T_{A,n,cfg\lambda}$		24	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} u_d{}^{f\lambda} \sigma_{\mu\nu} T_{A,n,cef\lambda}$	26	59
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}\sigma_{\mu\lambda}T_{A,n,cfa\nu}$		25	$i\epsilon^{abc}\bar{B}_a{}^df_{s,+}{}^{\mu\nu}u_b{}^e{}_{\mu}T_{A,n,cde\nu}$	27	
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f\nu}u_f{}^{g\lambda}\sigma_{\mu\nu}T_{A,n,cdq\lambda}$		26	$i\epsilon^{abc}\bar{B}_a{}^df_{s,+}{}^{\mu\nu}u_b{}^{e\lambda}D_{\mu\lambda}T_{A,n,cde\nu}$	28	
$i\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{e}{}^{f\nu}u_{f}{}^{g\lambda}\sigma_{\mu\lambda}T_{A,n,cda\nu}$		27	$\epsilon^{abc} \bar{B}_a{}^d f_{s,+}{}^{\mu\nu} u_b{}^{e\lambda} \sigma_{\mu\nu} T_{A,n,cde\lambda}$	29	
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}f_{-c}{}^{f\nu\lambda}\gamma_{5}\gamma_{\mu}D_{\nu}T_{A,n,def\lambda}$	9	28	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} u_e{}^{f\lambda} \sigma_{\mu u} T_{A.n.cdf\lambda}$		60
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} f_{-c}{}^{f\nu\lambda} \gamma_5 \gamma_\nu D_\mu T_{A,n,def\lambda}$	10	29	$\epsilon^{abc} \bar{B}_a{}^d f_+{}^{ef\mu u} u_{be}{}^\lambda \sigma_{\mu u} T_{A.n.cdf\lambda}$		61
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}f_{-c}{}^{f\nu\lambda}\gamma_{5}\gamma_{\nu}D_{\lambda}T_{A,n,def\mu}$	11	30	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \chi_{+c}{}^f T_{A,n,def\mu}$	30	62
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}f_{-d}{}^{f\nu\lambda}\gamma_{5}\gamma_{\mu}D_{\nu}T_{A,n,cef\lambda}$	12	31	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \chi_{+d}{}^f T_{A,n,cef\mu}$	31	63
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} f_{-d}{}^{f\nu\lambda} \gamma_5 \gamma_{\nu} D_{\mu} T_{A,n,cef\lambda}$	13	32	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \chi_{+e}{}^f T_{A,n,cdf\mu}$		64
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}f_{-d}{}^{f\nu\lambda}\gamma_{5}\gamma_{\nu}D_{\lambda}T_{A,n,cef\mu}$	14	33	$\epsilon^{abc} \bar{B}_a{}^d u^{ef\mu} \chi_{+be} T_{A,n,cdf\mu}$		65
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}f_{-e}{}^{f\nu\lambda}\gamma_5\gamma_\mu D_\nu T_{A,n,cdf\lambda}$		34	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \chi_{+,s} T_{A,n,cde\mu}$	32	66
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}f_{-e}{}^{f\nu\lambda}\gamma_{5}\gamma_{\nu}D_{\mu}T_{A,n,cdf\lambda}$		35	$i\epsilon^{abc} \bar{B}_a{}^d abla^\mu \chi_{-b}{}^e T_{A,n,cde\mu}$	33	67

TABLE VII. Terms in the $\mathcal{O}(p^4)$ meson-octet-decuplet and $\pi N\Delta$ chiral Lagrangians, where $P_n^{(N_f,4)}$ is defined in Eqs. (64) and (66). For the SU(2) case, the form needs to be changed; see the sentences around Eq. (67).

$\overline{P_n^{(N_f,4)}}$	SU(2)	SU(3)	$P_n^{(N_f,4)}$	SU(2)	SU(3)
$\overline{\epsilon^{abc}\bar{B}_a}^d u_b{}^{e\mu} u_c{}^f{}_{\mu} u_d{}^{g\nu} u_e{}^{h\lambda} \gamma_5 \gamma_{\nu} T_{A,n,fgh\lambda}$	1	1	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} f_{-c}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,def\lambda}$	78	322
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^f{}_\mu u_d{}^{g\nu} u_e{}^{h\lambda} \gamma_5 \gamma_\lambda T_{A,n,fgh\nu}$	2	2	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} f_{-c}{}^f{}_{\nu}{}^{\lambda} \gamma_5 \gamma_{\mu} T_{A,n,def\lambda}$	79	323
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^f{}_\mu u_e{}^{g\nu} u_f{}^{h\lambda} \gamma_5 \gamma_\nu T_{A,n,dgh\lambda}$		3	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} f_{-c}{}^f{}_{\nu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,def\mu}$	80	324
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^f{}_\mu u_e{}^{g\nu} u_g{}^{h\lambda} \gamma_5 \gamma_\nu T_{A,n,dfh\lambda}$		4	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla_{\mu} f_{-d}{}^{f\nu\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cef\lambda}$	81	325
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^f{}_\mu u_e{}^{g\nu} u_g{}^{h\lambda} \gamma_5 \gamma_\lambda T_{A,n,dfh\nu}$		5	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} f_{-d}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cef\lambda}$	82	326
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{d}{}^{g}{}_{\mu}u_{e}{}^{h\lambda}\gamma_{5}\gamma_{\nu}T_{A,n,fgh\lambda}$	3	6	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} f_{-d}{}^f_{\nu}{}^{\lambda} \gamma_5 \gamma_{\mu} T_{A,n,cef\lambda}$	83	327
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_d{}^g{}_\mu u_e{}^{h\lambda} \gamma_5 \gamma_\lambda T_{A,n,fgh\nu}$		7	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} f_{-d}{}^f{}_{\nu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,cef\mu}$	84	328
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_d{}^g{}_\mu u_f{}^{h\lambda} \gamma_5 \gamma_\nu T_{A,n,egh\lambda}$	4	8	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla_{\mu} f_{-e}{}^{f\nu\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cdf\lambda}$		329
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{d}{}^{g}{}_{\mu}u_{f}{}^{h\lambda}\gamma_{5}\gamma_{\lambda}T_{A,n,egh\nu}$	5	9	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} f_{-e}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cdf\lambda}$		330
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_d{}^{g\lambda}u_e{}^h{}_{\mu}\gamma_5\gamma_{\nu}T_{A,n,fgh\lambda}$		10	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} f_{-e}{}^{f}_{\nu}{}^{\lambda} \gamma_5 \gamma_{\mu} T_{A,n,cdf\lambda}$		331
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_d{}^{g\lambda} u_e{}^h{}_{\mu} \gamma_5 \gamma_{\lambda} T_{A,n,fgh\nu}$		11	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} f_{-e}{}^f{}_{\nu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,cdf\mu}$		332
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_d{}^{g\lambda} u_e{}^h{}_{\nu} \gamma_5 \gamma_{\mu} T_{A,n,fgh\lambda}$	6	12	$\epsilon^{abc} \bar{B}_a{}^d u^{ef\mu} \nabla_\mu f_{-be}{}^{\nu\lambda} \gamma_5 \gamma_\nu T_{A,n,cdf\lambda}$		333
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_d{}^{g\lambda}u_e{}^h{}_{\nu}\gamma_5\gamma_{\lambda}T_{A,n,fgh\mu}$	7	13	$\epsilon^{abc} \bar{B}_a{}^d u^{ef\mu} \nabla^{\nu} f_{-be\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cdf\lambda}$		334
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_d{}^{g\lambda}u_e{}^h{}_{\lambda}\gamma_5\gamma_{\mu}T_{A,n,fgh\nu}$		14	$\epsilon^{abc} \bar{B}_a{}^d u^{ef\mu} \nabla^{\nu} f_{-be\nu}{}^{\lambda} \gamma_5 \gamma_{\mu} T_{A,n,cdf\lambda}$		335
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_d{}^{g\lambda}u_e{}^h{}_{\lambda}\gamma_5\gamma_{\nu}T_{A,n,fgh\mu}$		15	$\epsilon^{abc} \bar{B}_a{}^d u^{ef\mu} \nabla^{\nu} f_{-be\nu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,cdf\mu}$		336
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_e{}^g{}_{\mu} u_f{}^{h\lambda} \gamma_5 \gamma_{\nu} T_{A,n,dgh\lambda}$		16	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla_{\mu} h_c{}^{f\nu\lambda} \gamma_5 \gamma_{\nu} T_{A,n,def\lambda}$	85	337
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_e{}^g{}_{\mu} u_f{}^{h\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,dgh\nu}$		17	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla_{\mu} h_d{}^{f\nu\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cef\lambda}$	86	338
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^g{}_{\mu}u_g{}^{h\lambda}\gamma_5\gamma_{\nu}T_{A,n,dfh\lambda}$		18	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla_{\mu} h_e{}^{f\nu\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cdf\lambda}$		339
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g}{}_{\mu}u_{g}{}^{h\lambda}\gamma_{5}\gamma_{\lambda}T_{A,n,dfh\nu}$		19	$\epsilon^{abc} \bar{B}_a{}^d u^{ef\mu} abla_\mu h_{be}{}^{ u\lambda} \gamma_5 \gamma_ u T_{A,n,cdf\lambda}$		340

$P_n^{(N_f,4)}$	SU(2)	SU(3)	$P_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_e{}^g{}_{\nu}u_f{}^{h\lambda}\gamma_5\gamma_{\mu}T_{A,n,dgh\lambda}$		20	$\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_{a}{}^{d}f_{-b}{}^{e}{}_{\mu\nu}f_{-c}{}^{f}{}_{\lambda}{}^{\sigma}D_{\rho}T_{A,n,def\sigma}$	87	341
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g}{}_{\nu}u_{f}{}^{h\lambda}\gamma_{5}\gamma_{\lambda}T_{A,n,dgh\mu}$		21	$\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_{a}{}^{d}f_{-b}{}^{e}{}_{\mu\nu}f_{-e}{}^{f}{}_{\lambda}{}^{\sigma}D_{\rho}T_{A,n,cdf\sigma}$		342
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g}{}_{\nu}u_{g}{}^{h\lambda}\gamma_{5}\gamma_{\mu}T_{A,n,dfh\lambda}$		22	$\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{abc}\bar{B}_{a}{}^{d}h_{b}{}^{e}{}_{\mu}{}^{\sigma}f_{-c}{}^{f}{}_{\nu\lambda}D_{\rho}T_{A,n,def\sigma}$	88	343
$\epsilon^{abc} B_a^{\ d} u_b^{\ e\mu} u_c^{\ f\nu} u_e^{\ g}{}_{\nu} u_g^{\ h\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,dfh\mu}$		23	$\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{abc}B_{a}{}^{d}h_{b}{}^{e}{}_{\mu}{}^{\sigma}f_{-d}{}^{f}{}_{\nu\lambda}D_{\rho}T_{A,n,cef\sigma}$	89	344
$\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_f{}^h{}_{\lambda}\gamma_5\gamma_{\mu}T_{A,n,dgh\nu}$		24	$\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{abc}B_{a}{}^{d}h_{b}{}^{e}{}_{\mu}{}^{\sigma}f_{-e}{}^{f}{}_{\nu\lambda}D_{\rho}T_{A,n,cdf\sigma}$		345
$\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_g{}^h{}_{\mu}\gamma_5\gamma_{\nu}T_{A,n,dfh\lambda}$		25	$\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{abc}B_{a}{}^{a}h^{ef}{}_{\mu}{}^{\sigma}f_{-be\nu\lambda}D_{\rho}T_{A,n,cdf\sigma}$		346
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_e{}^{g\lambda} u_g{}^h{}_{\mu} \gamma_5 \gamma_{\lambda} T_{A,n,dfh\nu}$		26	$i\epsilon^{abc}B_a{}^df_{+b}{}^{e\mu\nu}u_c{}^f{}_{\mu}u_d{}^{g\lambda}\gamma_5\gamma_{\nu}T_{A,n,efg\lambda}$	90	347
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_g{}^h{}_\nu\gamma_5\gamma_\mu T_{A,n,dfh\lambda}$		27	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^f{}_{\mu}u_d{}^{g\lambda}\gamma_5\gamma_{\lambda}T_{A,n,efg u}$	91	348
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g\lambda}u_{g}{}^{h}{}_{\nu}\gamma_{5}\gamma_{\lambda}T_{A,n,dfh\mu}$		28	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu\nu}u_{c}{}^{f}{}_{\mu}u_{e}{}^{g\lambda}\gamma_{5}\gamma_{\nu}T_{A,n,dfg\lambda}$	92	349
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_e{}^{g\lambda} u_g{}^h_{\lambda} \gamma_5 \gamma_{\mu} T_{A,n,dfh\nu}$		29	$i\epsilon^{abc}B_a{}^df_{+b}{}^{e\mu\nu}u_c{}^f{}_{\mu}u_e{}^{g\lambda}\gamma_5\gamma_{\lambda}T_{A,n,dfg\nu}$	93	350
$\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_g{}^h_{\lambda}\gamma_5\gamma_{\nu}T_{A,n,dfh\mu}$		30	$i\epsilon^{abc}B_{a}{}^{d}f_{+b}{}^{e\mu\nu}u_{c}{}^{f}{}_{\mu}u_{f}{}^{g\lambda}\gamma_{5}\gamma_{\nu}T_{A,n,deg\lambda}$	94	351
$\epsilon^{abc}B_a{}^a u_b{}^{e\mu}u_d{}^f_{\mu}u_e{}^{g\nu}u_f{}^{h\lambda}\gamma_5\gamma_{\nu}T_{A,n,cgh\lambda}$		31	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_c{}^f_{\mu}u_f{}^{g\lambda}\gamma_5\gamma_{\lambda}T_{A,n,deg\nu}$	95	352
$\epsilon^{abc}B_a{}^a u_b{}^{e\mu}u_d{}^j{}_{\mu}u_e{}^{g\nu}u_g{}^{h\lambda}\gamma_5\gamma_{\nu}T_{A,n,cfh\lambda}$		32	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_c{}^{J\lambda}u_d{}^g{}_{\mu}\gamma_5\gamma_{\nu}T_{A,n,efg\lambda}$	96	353
$\epsilon^{abc}B_a^{\ a}u_b^{\ e\mu}u_d^{\ \mu}u_e^{\ g\nu}u_g^{\ n\lambda}\gamma_5\gamma_\lambda T_{A,n,cfh\nu}$		33	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_c{}^{J\lambda}u_d{}^g_{\mu}\gamma_5\gamma_{\lambda}T_{A,n,efg\nu}$	97	354
$\epsilon^{abc}B_a^{a}u_b^{e\mu}u_d^{J}{}_{\mu}u^{gn\nu}u_{hg}^{\lambda}\gamma_5\gamma_{\nu}T_{A,n,cef\lambda}$		34	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_c{}^{f\lambda}u_d{}^g_{\lambda}\gamma_5\gamma_{\mu}T_{A,n,efg\nu}$	98	355
$\epsilon^{abc}B_a^a u_b^{e\mu}u_d^{J\nu}u_e^{e\mu}u_f^{n\lambda}\gamma_5\gamma_{\nu}T_{A,n,cgh\lambda}$		35	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_c{}^{J\lambda}u_e{}^g{}_{\mu}\gamma_5\gamma_{\nu}T_{A,n,dfg\lambda}$		356
$\epsilon^{abc} B_a^{a} u_b^{e\mu} u_d^{J\nu} u_e^{g}{}_{\mu} u_f^{m\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,cgh\nu}$		30	$i\epsilon^{abc}B_{a}{}^{a}f_{+b}{}^{e\mu\nu}u_{c}{}^{j\nu}u_{e}{}^{g}{}_{\mu}\gamma_{5}\gamma_{\lambda}T_{A,n,dfg\nu}$	00	357
$\epsilon^{abc} B_a u_b \epsilon^{\mu} u_d \nu u_e {}^{g} {}_{\mu} u_g {}^{n \kappa} \gamma_5 \gamma_{\nu} T_{A,n,cfh\lambda}$		3/	$i\epsilon^{abc}B_a{}^af_{+b}\epsilon^{\mu\nu}u_c{}^{\gamma\kappa}u_e{}^g{}_{\lambda}\gamma_5\gamma_{\mu}T_{A,n,dfg\nu}$	99 100	338 250
$\epsilon^{abc} B_a^{a} u_b^{c} \mu u_d^{f} \nu u_e^{g} \mu u_f^{m} \gamma_5 \gamma_{\mu} T_{A,n,cgh\lambda}$		38	$i\epsilon^{abc}B_a{}^af_{+b}\epsilon^{\mu\nu}u_c{}^{j\kappa}u_f{}^g{}_{\mu}\gamma_5\gamma_{\nu}T_{A,n,deg\lambda}$	100	359
$\epsilon^{abc}B_{a}^{a}u_{b}^{e\mu}u_{d}^{J\nu}u_{e}^{g}{}_{\nu}u_{f}^{n\lambda}\gamma_{5}\gamma_{\lambda}T_{A,n,cgh\mu}$		39	$i\epsilon^{abc}B_{a}{}^{a}f_{+b}{}^{e\mu\nu}u_{c}{}^{j\nu}u_{f}{}^{g}{}_{\mu}\gamma_{5}\gamma_{\lambda}T_{A,n,deg\nu}$	101	360
$\epsilon^{abc}B_a{}^a u_b{}^{e\mu}u_d{}^{J\nu}u_e{}^g{}_\nu u_g{}^{n\lambda}\gamma_5\gamma_\mu T_{A,n,cfh\lambda}$		40	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_c{}^{J\lambda}u_f{}^g{}_{\lambda}\gamma_5\gamma_{\mu}T_{A,n,deg\nu}$	102	361
$\epsilon^{abc}B_a^a u_b^{e\mu}u_d^{J\nu}u_e^{e\nu}u_g^{n\lambda}\gamma_5\gamma_{\lambda}T_{A,n,cfh\mu}$		41	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_d{}^j{}_{\mu}u_e{}^{g\lambda}\gamma_5\gamma_{\nu}T_{A,n,cfg\lambda}$		362
$\epsilon^{abc}B_a^a u_b^{e\mu} u_d^{f\nu} u_e^{g\lambda} u_f^n _{\lambda} \gamma_5 \gamma_{\mu} T_{A,n,cgh\nu}$		42	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_d{}^j{}_{\mu}u_e{}^{g\lambda}\gamma_5\gamma_{\lambda}T_{A,n,cfg\nu}$		363
$\epsilon^{abc} B_a^{a} u_b^{e\mu} u_d^{J\nu} u_e^{g\mu} u_g^{n} v_{\gamma} \gamma_{\gamma} \mu_{A,n,cfh\lambda}$		43	$i\epsilon^{abc}B_a{}^af_{+b}\epsilon^{\mu\nu}u_d{}^j{}_\mu u_f{}^{g\lambda}\gamma_5\gamma_\nu T_{A,n,ceg\lambda}$		364
$\epsilon^{abc} B_a^{\alpha} u_b^{\alpha} \epsilon^{\mu} u_e^{\gamma} {}_{\mu} u_f^{g\nu} u_g^{n\kappa} \gamma_5 \gamma_{\nu} T_{A,n,cdh\lambda}$		44	$i\epsilon^{abc}B_a{}^af_{+b}\epsilon^{\mu\nu}u_d{}^j{}_\mu u_f{}^{g\kappa}\gamma_5\gamma_\lambda I_{A,n,ceg\nu}$		305
$\epsilon^{abc} B_a u_b \epsilon^{\mu} u_e^{-\mu} u_f^{g\nu} u_g^{n\kappa} \gamma_5 \gamma_{\lambda} I_{A,n,cdh\nu}$		45	$i\epsilon^{abc}B_{a}{}^{a}f_{+b}\epsilon^{\mu\nu}u_{d}{}^{j\kappa}u_{e}{}^{g}{}_{\mu}\gamma_{5}\gamma_{\nu}T_{A,n,cfg\lambda}$		300 267
$\epsilon^{abc} \overline{B}_{a} u_{b}^{b} \gamma u_{e}^{j} \mu^{u_{j}m} u_{hg} \gamma_{5} \gamma_{\nu} I_{A,n,cdf\lambda}$		40	$le^{abc}B_{a}^{a}J_{+b}e^{\mu\nu}u_{d}^{J}{}^{\mu}u_{e}^{g}{}_{\mu}\gamma_{5}\gamma_{\lambda}I_{A,n,cfg\nu}$		269
$\epsilon^{abc} B_a u_b + u_e u_f u_f u_g + \gamma_5 \gamma_{\nu} I_{A,n,cdh\lambda}$		47	$l\epsilon^{abc}B_a{}^a f_{+b} {}^{\mu} u_d{}^{\mu} u_e{}^s {}_{\lambda}\gamma_5\gamma_{\mu}I_{A,n,cfg\nu}$		200
$\epsilon^{abc} B_a^{a} u_b^{e} \mu_e^{\rho} \nu_{df}^{g} {}_{\mu} u_g^{n\kappa} \gamma_5 \gamma_{\lambda} T_{A,n,cdh\nu}$		48	$i\epsilon^{abc}B_a{}^af_{+b}\epsilon^{\mu\nu}u_d{}^{j\kappa}u_f{}^g{}_{\mu}\gamma_5\gamma_{\nu}T_{A,n,ceg\lambda}$		309
$\epsilon^{abc}B_{a}^{a}u_{b}^{e\mu}u_{e}^{f\nu}u_{f}^{g\lambda}u_{g}^{h}{}_{\mu}\gamma_{5}\gamma_{\nu}T_{A,n,cdh\lambda}$		49	$i\epsilon^{abc}B_{a}{}^{a}f_{+b}{}^{e\mu\nu}u_{d}{}^{j}{}^{\lambda}u_{f}{}^{g}{}_{\mu}\gamma_{5}\gamma_{\lambda}T_{A,n,ceg\nu}$		370
$\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_e{}^{f\nu}u_f{}^{g\lambda}u_g{}^h_{\nu}\gamma_5\gamma_{\mu}T_{A,n,cdh\lambda}$		50	$i\epsilon^{abc}B_a{}^df_{+b}{}^{e\mu\nu}u_d{}^{J\lambda}u_f{}^g{}_{\lambda}\gamma_5\gamma_{\mu}T_{A,n,ceg\nu}$		371
$\epsilon^{abc}B_a^a u_b^{e\mu} u_e^{J\nu} u_f^{g\lambda} u_g^n \gamma_5 \gamma_\lambda T_{A,n,cdh\mu}$	0	51	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_e{}^j{}_{\mu}u_f{}^{g\lambda}\gamma_5\gamma_{\nu}T_{A,n,cdg\lambda}$		372
$\epsilon^{abc}B_a^{a}u_b^{e\mu}u_c^{j\nu}u_d^{g\lambda}u_e^{n\rho}\gamma_5\gamma_{\mu}D_{\nu\lambda}T_{A,n,fgh\rho}$	8	52	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_e{}^{j}{}_{\mu}u_f{}^{g\lambda}\gamma_5\gamma_{\lambda}T_{A,n,cdg\nu}$		373
$\epsilon^{abc}B_a^a u_b^{\ e\mu} u_c^{\ f\nu} u_d^{\ g\lambda} u_e^{\ n\rho} \gamma_5 \gamma_\mu D_{\nu\rho} T_{A,n,fgh\lambda}$	9	53	$i\epsilon^{abc}B_{a}{}^{a}f_{+b}{}^{e\mu\nu}u_{e}{}^{j\lambda}u_{f}{}^{g}{}_{\mu}\gamma_{5}\gamma_{\nu}T_{A,n,cdg\lambda}$		3/4
$\epsilon^{abc}B_a{}^a u_b{}^{e\mu}u_c{}^{f\nu}u_d{}^{g\lambda}u_e{}^{h\rho}\gamma_5\gamma_\mu D_{\lambda\rho}T_{A,n,fgh\nu}$		54	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u_e{}^{f\lambda}u_f{}^g{}_{\mu}\gamma_5\gamma_{\lambda}T_{A,n,cdg\nu}$		375
$\epsilon^{abc}B_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_d{}^{g\lambda}u_e{}^{h\rho}\gamma_5\gamma_\nu D_{\mu\lambda}T_{A,n,fgh\rho}$	10	55	$i\epsilon^{abc}B_{a}{}^{d}f_{+b}{}^{e\mu\nu}u_{e}{}^{f\lambda}u_{f}{}^{g}{}_{\lambda}\gamma_{5}\gamma_{\mu}T_{A,n,cdg\nu}$		376
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_d{}^{g\lambda} u_e{}^{h\rho} \gamma_5 \gamma_\nu D_{\mu\rho} T_{A,n,fgh\lambda}$	11	56	$i\epsilon^{abc}B_a{}^df_{+b}{}^{e\mu\nu}u^{fg}{}_{\mu}u_{gf}{}^{\lambda}\gamma_5\gamma_{\nu}T_{A,n,cde\lambda}$		377
$\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_d{}^{g\lambda}u_e{}^{h\rho}\gamma_5\gamma_\nu D_{\lambda\rho}T_{A,n,fgh\mu}$	12	57	$i\epsilon^{abc}B_a{}^df_{+b}{}^{e\mu\nu}u^{fg}_{\mu}u_{gf}{}^{\lambda}\gamma_5\gamma_{\lambda}T_{A,n,cde\nu}$		378
$\epsilon^{abc}B_a{}^a u_b{}^{e\mu}u_c{}^{J\nu}u_d{}^{g\lambda}u_e{}^{n\rho}\gamma_5\gamma_\lambda D_{\mu\nu}T_{A,n,fgh\rho}$	13	58	$i\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}u^{Jg\lambda}u_{gf\lambda}\gamma_5\gamma_{\mu}T_{A,n,cde\nu}$		379
$\epsilon^{\mu\nu\nu}B_a^{\ a}u_b^{\ e\mu}u_c^{\ J\nu}u_d^{\ g\mu}u_e^{\ n\rho}\gamma_5\gamma_\lambda D_{\mu\rho}T_{A,n,fgh\nu}$	14	59	$i\epsilon^{a\nu c}B_{a}{}^{a}f_{+}{}^{e_{J}\mu\nu}u_{be\mu}u_{c}{}^{g\lambda}\gamma_{5}\gamma_{\nu}T_{A,n,dfg\lambda}$		380
$\epsilon^{abc} B_a^a u_b^{e\mu} u_c^{f\nu} u_d^{g\mu} u_e^{n\rho} \gamma_5 \gamma_\lambda D_{\nu\rho} T_{A,n,fgh\mu}$	14	60	$i\epsilon^{abc}B_a^{a}f_{+}^{ef\mu\nu}u_{be\mu}u_c^{g\lambda}\gamma_5\gamma_{\lambda}T_{A,n,dfg\nu}$		381
$\epsilon^{a\nu\nu}B_a{}^{\mu}u_b{}^{\nu}u_d{}^{\mu}u_d{}^{g\nu}u_e{}^{\mu\nu}\gamma_5\gamma_\rho D_{\mu\nu}T_{A,n,fgh\lambda}$		01	$i\epsilon^{avc}B_a{}^af_+\epsilon^{j\mu\nu}u_{be\mu}u_d{}^{g\nu}\gamma_5\gamma_{\nu}T_{A,n,cfg\lambda}$		382
$e^{abc} \overline{\mathbf{B}}_{a} u_{b} c^{\mu} u_{c} v_{d} u_{d} u_{e}^{\mu\nu} \gamma_{5} \gamma_{\rho} D_{\mu\lambda} I_{A,n,fgh\nu}$		02 63	$i\epsilon^{BC} B_{a}^{C} J_{+}^{C} \delta^{\mu\nu} u_{be\mu} u_{d}^{g\mu} \gamma_{5} \gamma_{\lambda} I_{A,n,cfg\nu}$		203 201
$e^{abc} \bar{\mathbf{D}}_{a} u_{b} v_{\mu} u_{c} v_{\mu} u_{d} v_{\mu} u_{\mu} v_{5} \gamma_{\rho} D_{\nu\lambda} I_{A,n,fgh\mu}$		03 64	$ie^{-ib} B_a^{\alpha} J_{+}^{\beta} e^{j\mu\nu} u_{be\mu} u_f^{\beta\nu} \gamma_5 \gamma_{\nu} I_{A,n,cdg\lambda}$		204 205
$\mathbf{e} \mathbf{D}_{a}^{\ } u_{b}^{\ } u_{c}^{\ } u_{e}^{\ } u_{f}^{\ } u_{f}^{\ } \mu_{\rho}^{\ } \mu_{\rho}^{\ } \mathcal{D}_{\lambda} \mathcal{I}_{A,n,dgh\rho}$ $c^{abc} \mathbf{\bar{P}} d_{\mu} e_{\mu} f_{\nu} g_{\lambda\mu} h_{\rho} \mathcal{D} \mathbf{T}$		65	$i \epsilon^{abc} \bar{\mathbf{R}} df e^{f\mu\nu} \mu^{\lambda\mu} q^{\mu\nu} \tau^{T}$		205 386
$\mathbf{c} \mathbf{D}_{a} u_{b} u_{c} u_{e} u_{f} \gamma_{5} \gamma_{\mu} \mathcal{D}_{\nu \rho} \mathbf{I}_{A,n,dgh\lambda}$ $\mathbf{c}^{abc} \mathbf{\bar{p}} d_{\mu} e_{\mu \mu} f_{\nu \mu} a_{\lambda \mu} h_{\rho \mu} \mathbf{p} \mathbf{T}$		66	$ \mathbf{D}_{a} J_{+} \overset{o}{=} u_{be} u_{c} \overset{o}{}_{\mu} \gamma_{5} \gamma_{\nu} I_{A,n,dfg\lambda} $ $ \mathbf{f}_{c}^{abc} \mathbf{\bar{P}} df e^{f\mu\nu} \overset{o}{=} \lambda_{\mu} \overset{o}{=} \mathbf{T} $		300
$\mathbf{c} \mathbf{D}_a u_b u_c u_e u_f \gamma_5 \gamma_\mu \mathbf{D}_{\lambda\rho} \mathbf{I}_{A,n,dgh\nu}$		00	$u_{c} D_{a} J + u_{be} u_{c} \mu \gamma_{5} \gamma_{\lambda} I_{A,n,dfg\nu}$		507

TABLE VII. (Continued)

$P_n^{(N_f,4)}$	SU(2)	SU(3)	$P_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} u_e{}^{g\lambda} u_f{}^{h\rho} \gamma_5 \gamma_\lambda D_{\mu\nu} T_{A,n,dgh\rho}$		67	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}u_{be}{}^\lambda u_c{}^g{}_\lambda\gamma_5\gamma_\mu T_{A,n,dfg u}$		388
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g\lambda}u_{f}{}^{h\rho}\gamma_{5}\gamma_{\lambda}D_{\mu\rho}T_{A,n,dgh\nu}$		68	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}u_{be}{}^{\lambda}u_d{}^g{}_{\mu}\gamma_5\gamma_{\nu}T_{A,n,cfg\lambda}$		389
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_f{}^{h\rho}\gamma_5\gamma_\lambda D_{\nu\rho}T_{A,n,dgh\mu}$		69	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}u_{be}{}^{\lambda}u_d{}^{g}_{\mu}\gamma_5\gamma_{\lambda}T_{A,n,cfg u}$		390
$\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\mu D_{\nu\lambda}T_{A,n,dfh\rho}$		70	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}u_{be}{}^{\lambda}u_d{}^g{}_{\lambda}\gamma_5\gamma_{\mu}T_{A,n,cfg u}$		391
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\mu D_{\nu\rho}T_{A,n,dfh\lambda}$		71	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu u}u_{be}{}^{\lambda}u_{f}{}^{g}_{\mu}\gamma_{5}\gamma_{ u}T_{A,n,cdg\lambda}$		392
$\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\mu D_{\lambda\rho}T_{A,n,dfh\nu}$		72	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu u}u_{be}{}^{\lambda}u_{f}{}^{g}_{\mu}\gamma_{5}\gamma_{\lambda}T_{A,n,cdg u}$		393
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g\lambda}u_{q}{}^{h\rho}\gamma_{5}\gamma_{\nu}D_{\mu\lambda}T_{A.n.dfh\rho}$		73	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}u_{be}{}^{\lambda}u_f{}^g{}_{\lambda}\gamma_5\gamma_{\mu}T_{A,n,cdq u}$		394
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_q{}^{h\rho}\gamma_5\gamma_\nu D_{\mu\rho}T_{A,n,dfh\lambda}$		74	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu\nu}u_{b}{}^{g}{}_{\mu}u_{ge}{}^{\lambda}\gamma_{5}\gamma_{\nu}T_{A.n.cdf\lambda}$		395
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_q{}^{h\rho}\gamma_5\gamma_\nu D_{\lambda\rho}T_{A,n,dfh\mu}$		75	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu\nu}u_{b}{}^{g}{}_{\mu}u_{ge}{}^{\lambda}\gamma_{5}\gamma_{\lambda}T_{A.n.cdf\nu}$		396
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g\lambda}u_{g}{}^{h\rho}\gamma_{5}\gamma_{\lambda}D_{\mu\nu}T_{A,n,dfh\rho}$		76	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_d{}^{g ho}\gamma_5\gamma_\mu D_{\nu\lambda}T_{A,n,efg ho}$	103	397
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g\lambda}u_{g}{}^{h\rho}\gamma_{5}\gamma_{\lambda}D_{\mu\rho}T_{A,n,dfh\nu}$		77	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_d{}^{g ho}\gamma_5\gamma_\mu D_{ u ho}T_{A,n,efg\lambda}$	104	398
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g\lambda}u_{g}{}^{h\rho}\gamma_{5}\gamma_{\lambda}D_{\nu\rho}T_{A,n,dfh\mu}$		78	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_d{}^{g ho}\gamma_5\gamma_\mu D_{\lambda ho}T_{A,n,efg u}$	105	399
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}u_{e}{}^{g\lambda}u_{g}{}^{h\rho}\gamma_{5}\gamma_{\rho}D_{\mu\nu}T_{A,n,dfh\lambda}$		79	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu\nu}u_c{}^{f\lambda}u_d{}^{g\rho}\gamma_5\gamma_\lambda D_{\mu\rho}T_{A,n,efg\nu}$	106	400
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\rho D_{\mu\lambda}T_{A,n,dfh\nu}$		80	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_d{}^{g ho}\gamma_5\gamma_ ho D_{\mu\lambda}T_{A,n,efg u}$	107	401
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\rho D_{\nu\lambda}T_{A,n,dfh\mu}$		81	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_e{}^{g ho}\gamma_5\gamma_\mu D_{ u\lambda}T_{A,n,dfg ho}$	108	402
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}u_f{}^{h\rho}\gamma_5\gamma_\mu D_{\nu\lambda}T_{A,n,cgh\rho}$		82	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_e{}^{g ho}\gamma_5\gamma_\mu D_{ u ho}T_{A,n,dfg\lambda}$		403
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}u_f{}^{h\rho}\gamma_5\gamma_\mu D_{\nu\rho}T_{A,n,cgh\lambda}$		83	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_e{}^{g ho}\gamma_5\gamma_\mu D_{\lambda ho}T_{A,n,dfg u}$	109	404
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}u_f{}^{h\rho}\gamma_5\gamma_\mu D_{\lambda\rho}T_{A,n,cgh\nu}$		84	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_e{}^{g ho}\gamma_5\gamma_\lambda D_{\mu ho}T_{A,n,dfg u}$	110	405
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}u_f{}^{h\rho}\gamma_5\gamma_\lambda D_{\mu\nu}T_{A,n,cgh\rho}$		85	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_e{}^{g ho}\gamma_5\gamma_ ho D_{\mu\lambda}T_{A,n,dfg u}$		406
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}u_f{}^{h\rho}\gamma_5\gamma_\lambda D_{\mu\rho}T_{A,n,cgh\nu}$		86	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_c{}^{f\lambda}u_f{}^{g ho}\gamma_5\gamma_\mu D_{ u\lambda}T_{A,n,deg ho}$	111	407
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{d}{}^{f\nu}u_{e}{}^{g\lambda}u_{f}{}^{h\rho}\gamma_{5}\gamma_{\lambda}D_{\nu\rho}T_{A,n,cgh\mu}$		87	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}u_{c}{}^{f\lambda}u_{f}{}^{g ho}\gamma_{5}\gamma_{\mu}D_{ u ho}T_{A,n,deg\lambda}$	112	408
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{d}{}^{f\nu}u_{e}{}^{g\lambda}u_{g}{}^{h\rho}\gamma_{5}\gamma_{\mu}D_{\nu\lambda}T_{A,n,cfh\rho}$		88	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu\nu}u_{c}{}^{f\lambda}u_{f}{}^{g\rho}\gamma_{5}\gamma_{\mu}D_{\lambda\rho}T_{A,n,deg\nu}$	113	409
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\mu D_{\nu\rho}T_{A,n,cfh\lambda}$		89	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu\nu}u_{c}{}^{f\lambda}u_{f}{}^{g\rho}\gamma_{5}\gamma_{\lambda}D_{\mu\rho}T_{A,n,deg\nu}$	114	410
$\epsilon^{abc}B_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\nu D_{\mu\lambda}T_{A,n,cfh\rho}$		90	$i\epsilon^{abc}B_a{}^df_{+b}{}^{e\mu\nu}u_c{}^{f\lambda}u_f{}^{g\rho}\gamma_5\gamma_\rho D_{\mu\lambda}T_{A,n,deg\nu}$	115	411
$\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\nu D_{\mu\rho}T_{A,n,cfh\lambda}$		91	$i\epsilon^{abc}B_a{}^df_{s,+}{}^{\mu\nu}u_b{}^e{}_{\mu}u_c{}^{f\lambda}\gamma_5\gamma_{\nu}T_{A,n,def\lambda}$	116	
$\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_d{}^{f\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\nu D_{\lambda\rho}T_{A,n,cfh\mu}$		92	$i\epsilon^{abc}B_a{}^df_{s,+}{}^{\mu\nu}u_b{}^e{}_{\mu}u_c{}^{f\lambda}\gamma_5\gamma_{\lambda}T_{A,n,def\nu}$	117	
$\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_d{}^{j\nu}u_e{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\lambda D_{\mu\nu}T_{A,n,cfh\rho}$		93	$i\epsilon^{abc}B_a{}^df_{s,+}{}^{\mu\nu}u_b{}^e{}_{\mu}u_d{}^{f\lambda}\gamma_5\gamma_{\nu}T_{A,n,cef\lambda}$	118	
$\epsilon^{abc}B_{a}^{a}u_{b}^{e\mu}u_{d}^{J\nu}u_{e}^{g\lambda}u_{g}^{h\rho}\gamma_{5}\gamma_{\lambda}D_{\nu\rho}T_{A,n,cfh\mu}$		94	$i\epsilon^{abc}B_a{}^af_{s,+}^{\mu\nu}u_b{}^e{}_{\mu}u_d{}^{J\lambda}\gamma_5\gamma_{\lambda}T_{A,n,cef\nu}$	119	
$\epsilon^{abc}B_a{}^a u_b{}^{e\mu}u_e{}^{f\nu}u_f{}^{g\lambda}u_g{}^{h\rho}\gamma_5\gamma_\mu D_{\nu\lambda}T_{A,n,cdh\rho}$		95	$i\epsilon^{abc}B_a{}^af_{s,+}^{\mu\nu}u_b{}^{e\lambda}u_d{}^J_{\lambda\gamma5\gamma\mu}T_{A,n,cef\nu}$	120	
$\epsilon^{abc} B_a^a u_b^{e\mu} u_e^{f\nu} u_f^{g\lambda} u_g^{h\rho} \gamma_5 \gamma_\mu D_{\nu\rho} T_{A,n,cdh\lambda}$		96	$i\epsilon^{abc}B_a{}^af_{s,+}^{\mu\nu}u_b{}^{e\nu}u_c{}^{f\rho}\gamma_5\gamma_{\mu}D_{\nu\lambda}T_{A,n,def\rho}$	121	
$\epsilon^{abc} B_a^a u_b^{e\mu} u_e^{f\nu} u_f^{g\lambda} u_g^{h\rho} \gamma_5 \gamma_\mu D_{\lambda\rho} T_{A,n,cdh\nu}$		97	$i\epsilon^{abc}B_a{}^af_{s,+}^{\mu\nu}u_b{}^{e\nu}u_c{}^{f\rho}\gamma_5\gamma_\lambda D_{\mu\rho}T_{A,n,def\nu}$	122	
$\epsilon^{abc} B_a^{a} u_b^{e\mu} u_e^{f\nu} u_f^{g\lambda} u_g^{h\rho} \gamma_5 \gamma_{\nu} D_{\mu\lambda} T_{A,n,cdh\rho}$		98	$i\epsilon^{abc}B_a{}^af_{s,+}^{\mu\nu}u_b{}^{e\kappa}u_d{}^{j\rho}\gamma_5\gamma_{\mu}D_{\nu\lambda}T_{A,n,cef\rho}$	123	
$\epsilon^{abc} B_a^{\mu} u_b^{\mu} u_e^{\mu} v_f^{\mu} u_g^{\mu} \gamma_5 \gamma_{\nu} D_{\mu\rho} T_{A,n,cdh\lambda}$		99	$i\epsilon^{abc}B_a{}^a f_{s,+}^{\mu\nu} u_b \epsilon^{\kappa} u_d{}^{\rho} \gamma_5 \gamma_{\mu} D_{\lambda\rho} T_{A,n,cef\nu}$	124	
$\epsilon^{abc} B_a u_b \epsilon^{\mu} u_e \nu u_f g^{\mu} u_g^{\mu\nu} \gamma_5 \gamma_{\nu} D_{\lambda\rho} T_{A,n,cdh\mu}$		100	$i\epsilon^{abc}B_a{}^a f_{s,+}^{\mu\nu}u_b{}^{e\kappa}u_d{}^{\rho}\gamma_5\gamma_\lambda D_{\mu\rho}T_{A,n,cef\nu}$	125	412
$\epsilon^{abc} B_a u_b \epsilon^{\mu} u_e \tau^{\nu} u_f^{ga} u_g^{h\rho} \gamma_5 \gamma_{\rho} D_{\mu\nu} I_{A,n,cdh\lambda}$		101	$i\epsilon^{abc}B_{a}{}^{a}f_{+b}{}^{c}\mu\nu u_{d}{}^{J}{}^{\lambda}u_{e}{}^{g\rho}\gamma_{5}\gamma_{\mu}D_{\nu\lambda}I_{A,n,cfg\rho}$		412
$\epsilon^{abc} B_a^{a} u_b^{e\mu} u_e^{\rho\nu} u_f^{g\mu} u_g^{\mu\rho} \gamma_5 \gamma_{\rho} D_{\mu\lambda} T_{A,n,cdh\nu}$	15	102	$i\epsilon^{abc}B_a{}^af_{+b}\epsilon^{\mu\nu}u_d{}^J{}^\kappa u_e{}^{g\rho}\gamma_5\gamma_\mu D_{\nu\rho}T_{A,n,cfg\lambda}$		413
$\mathcal{E}^{\mu\nu\rho\rho}\mathcal{E}^{abc}\mathcal{B}_{a}^{a}\mathcal{U}_{b}^{c}{}_{\mu}\mathcal{U}_{c}^{f}{}_{\nu}\mathcal{U}_{d}^{g}{}_{\lambda}\mathcal{U}_{e}^{hc}\mathcal{D}_{\rho}\mathcal{I}_{A,n,fgh\sigma}$	15	103	$i\epsilon^{abc}B_{a}^{a}f_{+b}^{b}\epsilon^{\mu\nu}u_{d}^{J}{}^{\mu}u_{e}^{g\rho}\gamma_{5}\gamma_{\mu}D_{\lambda\rho}T_{A,n,cfg\nu}$		414
$\mathcal{E}^{\mu\nu\rho\rho} \mathcal{E}^{a\nu} B_a^{\alpha} \mathcal{U}_b^{\rho}{}_{\mu} \mathcal{U}_c^{\sigma}{}_{\nu} \mathcal{U}_d^{\sigma\nu} \mathcal{U}_e^{\alpha}{}_{\lambda} \mathcal{D}_{\rho} I_{A,n,fgh\sigma}$		104	$i\epsilon^{abc} B_a df_{+b} \epsilon^{\mu\nu} u_d^{J\nu} u_e^{g\nu} \gamma_5 \gamma_\lambda D_{\mu\rho} I_{A,n,cfg\nu}$		415
$\mathcal{E}^{\mu\nu\lambda\rho} \mathcal{E}^{abc} \mathcal{B}_{a}^{a} \mathcal{U}_{b}^{c}{}_{\mu} \mathcal{U}_{c}^{c}{}_{\nu} \mathcal{U}_{d}^{gb} \mathcal{U}_{g}^{a}{}_{\lambda} \mathcal{D}_{\rho} \mathcal{I}_{A,n,efh\sigma}$		105	$le^{abc}B_{a}^{a}J_{+b}e^{\mu\nu}u_{d}^{J}\lambda u_{e}^{s\rho}\gamma_{5}\gamma_{\rho}D_{\mu\lambda}I_{A,n,cfg\nu}$		410
$\mathcal{E}^{\mu\nu\rho} \mathcal{E}^{\mu\nu} \mathcal{E}^{\sigma\nu} \mathcal{B}_{a}^{\mu} \mathcal{U}_{b}^{\nu} \mathcal{U}_{c}^{\sigma\nu} \mathcal{U}_{e}^{\sigma\lambda} \mathcal{U}_{f}^{\mu\nu} \mathcal{D}_{\rho} \mathcal{I}_{A,n,dgh\sigma}$		100	$i\epsilon^{abc} \bar{\mathbf{D}}_{a} \int_{+b}^{+r} u_{d} \int_{-b}^{abc} \gamma_{5} \gamma_{\mu} D_{\nu\lambda} I_{A,n,ceg\rho}$		417
$c \rightarrow c \qquad D_a \qquad u_b \ \mu u_c \ \nu u_e \ \lambda u_g \ D_\rho I_{A,n,dfh\sigma}$ $c \mu \nu \lambda \rho_c a b c \ \bar{R} \ d \ \mu e \ \mu f \ \mu \ a \sigma \mu h \ D \ T$		107	$ic D_a J_{+b} u_d u_f^{(s)} \gamma_5 \gamma_\mu D_{\nu\rho} I_{A,n,ceg\lambda}$ $ic^{abc} \bar{\mathbf{R}} df e^{\mu\nu} \mu_{\sigma} f^{\lambda} \mu_{\sigma} \rho \to \mathbf{T}$		410 410
$\mathcal{E}^{\mu\nu} \mathcal{E}^{\mu\nu} \mathcal{E}^{\mu\nu} \mathcal{E}^{\sigma\nu} \mathcal{D}_{\mu} \mathcal{U}_{\sigma}^{\sigma\nu} \mathcal{U}_{\mu} \mathcal{E}^{\sigma\nu} \mathcal{U}_{\mu} \mathcal{U}_{\sigma}^{\sigma\nu} \mathcal{U}_{\mu$		100	$ie^{-D} B_{a} J_{+b} + u_{d} u_{f} J_{f} \gamma_{5} \gamma_{\mu} D_{\lambda \rho} I_{A,n,ceg\nu}$ $ic^{abc} \bar{\mathbf{p}} df e^{\mu\nu} u_{f} \delta_{\lambda \mu} q^{\rho} q_{\lambda \mu} \mathbf{p} T$		420
$c \rightarrow c D_a u_b \mu u_c \nu u \lambda u_{hg} D_{\rho} I_{A,n,def\sigma}$ $c \mu \nu \lambda \rho_c a b c \bar{R} d_{\mu,e} \mu f \sigma_{\mu,g} \mu h D T$		110	$ic D_a J + b u_d u_f \gamma_5 \gamma_\lambda D_{\mu\rho} I_{A,n,ceg\nu}$ $ic^{abc} \bar{B} df e^{\mu\nu} \mu_{\sigma} f^{\lambda} \mu_{\sigma} g^{\rho} q^{\nu} q^{\nu} D T$		420
$c \rightarrow c D_a u_b \mu u_c \rightarrow u_f \lambda D_{\rho} I_{A,n,dgh\sigma}$ $e^{\mu\nu\lambda\rho} e^{abc} \bar{R} d_{\mu}, e \mu f \mu g_{\mu\nu}, h\sigma D T$		111	$ic D_a J + b u_d u_f \forall 5 \gamma \rho D_{\mu\lambda} I_{A,n,ceg\nu}$ $i_c abc \bar{B} df e^{\mu\nu} \mu f^{\lambda} \mu g^{\rho} \gamma = \gamma D T$		421
$\mathcal{L} = \mathcal{L} = $		112	$i_{\mathcal{L}}^{abc} \bar{\mathbf{R}} df_{\mu}^{abc} e^{\mu \nu} \mu f^{\lambda} \mu g^{\mu} \gamma^{\lambda} \mathbf{R}^{\lambda} D T$		423
$\mathcal{L} = \mathcal{L} = $		112	$i \mathcal{B}_{a} J + b u_{e} u_{f} \gamma \leq \gamma \mu \mathcal{D}_{\nu} \rho^{I} A, n, cdg\lambda$ $i \mathcal{B}_{a} b c \bar{\mathbf{B}} d f e \mu \nu_{\mu} f \lambda_{\mu} g \rho \gamma_{e} \gamma_{e} \mathbf{D} \cdot \mathbf{T}$		474
$\sum_{\mu\nu\lambda\rho} \sum_{a} \sum_{\mu\nu} \sum_{\mu\nu} \sum_{\mu} \sum_{\mu}$		114	$ \sum_{a} \int a \int a \int b = u_{e} u_{f} \int f \mu \partial \rho A A, n, c dg \mu $ $ i_{E} abc \bar{B} df , e \mu \nu_{\mu} f \lambda_{\mu} g \rho \gamma_{e} \gamma_{e} D T . $		425
c b a u b μ u e ν u f u g λ b ρ A , n , $cdh\sigma$			$a J + b$ $e a f I 5 I \lambda D \mu \rho^{T} A, n, c dg \nu$		120

$P_n^{(N_f,4)}$	SU(2)	SU(3)	$P_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^f{}_\mu f_{-e}{}^{g\nu\lambda} D_\nu T_{A,n,dfg\lambda}$	16	115	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u_e{}^{f\lambda}u_f{}^{g ho}\gamma_5\gamma_ ho D_{\mu\lambda}T_{A,n,cdq u}$		426
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}f_{-d}{}^g{}_^\lambda D_\nu T_{A,n,efg\lambda}$	17	116	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}u^{fg\lambda}u_{gf}{}^{ ho}\gamma_5\gamma_{\mu}D_{\nu\lambda}T_{A,n,cde ho}$		427
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} f_{-d}{}^g{}_^\lambda D_\lambda T_{A,n,efg\nu}$	18	117	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}u^{fg\lambda}u_{gf}{}^{ ho}\gamma_{5}\gamma_{\mu}D_{\lambda ho}T_{A,n,cde u}$		428
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}f_{-e}{}^g{}_^\lambda D_\nu T_{A,n,dfg\lambda}$	19	118	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}u^{fg\lambda}u_{gf}{}^{ ho}\gamma_{5}\gamma_{\lambda}D_{\mu ho}T_{A,n,cde u}$		429
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}f_{-e}{}^g{}_^\lambda D_\lambda T_{A,n,dfg\nu}$	20	119	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}u_b{}_e{}^\lambda u_c{}^{g ho}\gamma_5\gamma_\mu D_{ u\lambda}T_{A,n,dfg ho}$		430
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}f_{-e}{}^g{}_^\lambda D_\mu T_{A,n,dfg\lambda}$	21	120	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}u_b{}_e{}^\lambda u_c{}^{g ho}\gamma_5\gamma_\mu D_{ u ho}T_{A,n,dfg\lambda}$		431
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{c}{}^{f\nu}f_{-e}{}^{g}{}_{\nu}{}^{\lambda}D_{\lambda}T_{A,n,dfg\mu}$	22	121	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu u}u_{be}{}^{\lambda}u_{c}{}^{g ho}\gamma_{5}\gamma_{\mu}D_{\lambda ho}T_{A,n,dfg u}$		432
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{d}{}^{f}_{\mu}f_{-c}{}^{g\nu\lambda}D_{\nu}T_{A,n,efg\lambda}$	23	122	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu u}u_{be}{}^{\lambda}u_{c}{}^{g ho}\gamma_{5}\gamma_{\lambda}D_{\mu ho}T_{A,n,dfg u}$		433
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{d}{}^{f}{}_{\mu}f_{-e}{}^{g\nu\lambda}D_{\nu}T_{A,n,cfg\lambda}$		123	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu u}u_{be}{}^{\lambda}u_{c}{}^{g ho}\gamma_{5}\gamma_{ ho}D_{\mu\lambda}T_{A,n,dfg u}$		434
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{d}{}^{f\nu}f_{-c}{}^{g}_{\mu}{}^{\lambda}D_{\nu}T_{A,n,efg\lambda}$	24	124	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu\nu}u_{be}{}^{\lambda}u_d{}^{g ho}\gamma_5\gamma_{\mu}D_{\nu\lambda}T_{A,n,cfg ho}$		435
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{d}{}^{f\nu}f_{-c}{}^{g}{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,efg\nu}$	25	125	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu\nu}u_{be}{}^{\lambda}u_d{}^{g\rho}\gamma_5\gamma_{\mu}D_{\nu\rho}T_{A,n,cfg\lambda}$		436
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{d}{}^{f\nu}f_{-e}{}^{g}{}_{\mu}{}^{\lambda}D_{\nu}T_{A,n,cfg\lambda}$		126	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu\nu}u_{be}{}^{\lambda}u_d{}^{g\rho}\gamma_5\gamma_{\mu}D_{\lambda\rho}T_{A,n,cfg\nu}$		437
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{d}{}^{f\nu}f_{-e}{}^{g}{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,cfg\nu}$		127	$i\epsilon^{abc}B_a{}^df_+{}^{ef\mu\nu}u_{be}{}^{\lambda}u_d{}^{g\rho}\gamma_5\gamma_{\lambda}D_{\mu\rho}T_{A,n,cfg\nu}$		438
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} f_{-e}{}^g{}_^\lambda D_\mu T_{A,n,cfg\lambda}$		128	$i\epsilon^{abc}B_a{}^df_+{}^{ef\mu\nu}u_{be}{}^{\lambda}u_d{}^{g\rho}\gamma_5\gamma_{\rho}D_{\mu\lambda}T_{A,n,cfg\nu}$		439
$\epsilon^{abc}B_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}f_{-e}{}^g{}_^\lambda D_\lambda T_{A,n,cfg\mu}$		129	$i\epsilon^{abc}B_a{}^df_+{}^{ef\mu\nu}u_{be}{}^{\lambda}u_f{}^{g\rho}\gamma_5\gamma_{\mu}D_{\nu\lambda}T_{A,n,cdg\rho}$		440
$\epsilon^{abc}B_a{}^d u_b{}^{e\mu}u_e{}^f{}_{\mu}f{}_{-c}{}^{g\nu\lambda}D_{\nu}T_{A,n,dfg\lambda}$		130	$i\epsilon^{abc}B_a{}^df_+{}^{ef\mu\nu}u_{be}{}^{\lambda}u_f{}^{g\rho}\gamma_5\gamma_{\mu}D_{\nu\rho}T_{A,n,cdg\lambda}$		441
$\epsilon^{abc}B_a{}^d u_b{}^{e\mu}u_e{}^f{}_{\mu}f{}_{-d}{}^{g\nu\lambda}D_{\nu}T_{A,n,cfg\lambda}$		131	$i\epsilon^{abc}B_a{}^df_+{}^{ef\mu\nu}u_{be}{}^{\lambda}u_f{}^{g\rho}\gamma_5\gamma_{\mu}D_{\lambda\rho}T_{A,n,cdg\nu}$		442
$\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_e{}^f{}_{\mu}f{}_{-f}{}^{g\nu\lambda}D_{\nu}T_{A,n,cdg\lambda}$		132	$i\epsilon^{abc}B_a{}^df_+{}^{ef\mu\nu}u_{be}{}^{\lambda}u_f{}^{g\rho}\gamma_5\gamma_{\lambda}D_{\mu\rho}T_{A,n,cdg\nu}$		443
$\epsilon^{abc}B_a{}^a u_b{}^{e\mu}u_e{}^{j\nu}f_{-c}{}^g{}_{\mu}{}^\lambda D_{\nu}T_{A,n,dfg\lambda}$		133	$i\epsilon^{abc}B_a{}^af_+{}^{ej\mu\nu}u_{be}{}^{\lambda}u_f{}^{g\rho}\gamma_5\gamma_\rho D_{\mu\lambda}T_{A,n,cdg\nu}$		444
$\epsilon^{abc}B_a^a u_b^{\ e\mu} u_e^{\ f\nu} f_{-c}^{\ e\mu} \Delta_\lambda T_{A,n,dfg\nu}$		134	$i\epsilon^{abc}B_a{}^af_+{}^{ej\mu\nu}u_b{}^{g\lambda}u_{ge}{}^{\rho}\gamma_5\gamma_{\mu}D_{\nu\lambda}T_{A,n,cdf\rho}$		445
$\epsilon^{abc} B_a^a u_b^{e\mu} u_e^{f\nu} f_{-c}^g{}_{\nu}^{\lambda} D_{\mu} T_{A,n,dfg\lambda}$		135	$i\epsilon^{abc}B_a{}^af_+{}^{ef\mu\nu}u_b{}^{g\lambda}u_{ge}{}^{\rho}\gamma_5\gamma_{\lambda}D_{\mu\rho}T_{A,n,cdf\nu}$	100	446
$\epsilon^{abc}B_a^a u_b^{e\mu}u_e^{f\nu}f_{-c}^{g\nu}{}^{\nu}D_{\lambda}T_{A,n,dfg\mu}$		136	$i\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}B_{a}^{a}f_{+b}\epsilon_{\mu\nu}u_{c}f_{\lambda}u_{d}^{gb}D_{\rho}T_{A,n,efg\sigma}$	126	447
$\epsilon^{abc}B_a^a u_b^{e\mu}u_e^{j\nu}f_{-d}^g{}_{\mu}\lambda D_{\nu}T_{A,n,cfg\lambda}$		13/	$i\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{abc}B_{a}{}^{a}f_{+b}{}^{e}{}_{\mu\nu}u_{c}{}^{f}{}_{\lambda}u_{e}{}^{go}D_{\rho}T_{A,n,dfg\sigma}$	127	448
$\epsilon^{abc}B_a^a u_b^{e\mu}u_e^{f\nu}f_{-d}^{g\mu}D_\lambda T_{A,n,cfg\nu}$		138	$i\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}B_{a}^{a}f_{+b}\epsilon_{\mu\nu}u_{c}f_{\lambda}u_{f}g^{b}D_{\rho}T_{A,n,deg\sigma}$	128	449
$\epsilon^{abc} B_a^{a} u_b^{e\mu} u_e^{j\nu} f_{-d}^{g} {}_{\nu} D_{\mu} T_{A,n,cfg\lambda}$		139	$i\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{a\nuc}B_a af_{+b}\varepsilon^{\mu\nu}u_c f^{\sigma}u_d^{g}_{\lambda}D_{\rho}T_{A,n,efg\sigma}$	129	450
$\epsilon^{abc}B_a^a u_b^{e\mu}u_e^{j\nu}f_{-d\nu}^{-d\nu}D_{\lambda}T_{A,n,cfg\mu}$		140	$i\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{abc}B_{a}{}^{a}f_{+b}{}^{e}{}_{\mu\nu}u_{c}{}^{fo}u_{e}{}^{g}{}_{\lambda}D_{\rho}T_{A,n,dfg\sigma}$	120	451
$\epsilon^{abc}B_{a}^{a}u_{b}^{e}{}^{\mu}u_{e}^{j\nu}f_{-f}^{g}{}_{\mu}^{\lambda}D_{\nu}T_{A,n,cdg\lambda}$		141	$i\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{a\nuc}B_{a}{}^{a}f_{+b}{}^{e}{}_{\mu\nu}u_{c}{}^{j\sigma}u_{f}{}^{g}{}_{\lambda}D_{\rho}T_{A,n,deg\sigma}$	130	452
$\epsilon^{abc}B_a{}^au_b{}^{e\mu}u_e{}^{f\nu}f_{-f}{}^g{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,cdg\nu}$		142	$i\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{abc}B_a{}^af_{s,+\mu\nu}u_b{}^e{}_{\lambda}u_c{}^{J\sigma}D_{\rho}T_{A,n,def\sigma}$	131	
$\epsilon^{abc} B_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} f_{-f}{}^g{}_^\lambda D_\mu T_{A,n,cdg\lambda}$		143	$i\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}B_a{}^df_{s,+\mu\nu}u_b{}^e{}_\lambda u_d{}^{f\sigma}D_\rho T_{A,n,cef\sigma}$	132	
$\epsilon^{abc} B_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} f_{-f}{}^g{}_^\lambda D_\lambda T_{A,n,cdg\mu}$		144	$i\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}B_a{}^df_{+b}{}^e{}_{\mu\nu}u_d{}^f{}_{\lambda}u_e{}^{g\sigma}D_{\rho}T_{A,n,cfg\sigma}$		453
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u^{fg}{}_{\mu}f{}_{-cf}{}^{\nu\lambda}D_{\nu}T_{A,n,deg\lambda}$	26	145	$i\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e}{}_{\mu\nu}u_{d}{}^{f}{}_{\lambda}u_{f}{}^{g\sigma}D_{\rho}T_{A,n,ceg\sigma}$		454
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_b{}^{fg}{}_{\mu}f_{-df}{}^{\nu\lambda}D_{\nu}T_{A,n,ceg\lambda}$		146	$i\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e}{}_{\mu\nu}u_{d}{}^{f\sigma}u_{e}{}^{g}{}_{\lambda}D_{\rho}T_{A,n,cfg\sigma}$		455
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u^{fg}{}_{\mu}f_{-ef}{}^{\nu\lambda}D_{\nu}T_{A,n,cdg\lambda}$		147	$i\epsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e}{}_{\mu\nu}u_{d}{}^{f\sigma}u_{f}{}^{g}{}_{\lambda}D_{\rho}T_{A,n,ceg\sigma}$		456
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u^{fg}{}_{\mu}f_{-gf}{}^{\nu\lambda}D_{\nu}T_{A,n,cde\lambda}$		148	$i\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e}{}_{\mu\nu}u_{e}{}^{f}{}_{\lambda}u_{f}{}^{g\sigma}D_{\rho}T_{A,n,cdg\sigma}$		457
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-cf\mu}{}^{\lambda} D_{\nu} T_{A,n,deg\lambda}$	27	149	$i\epsilon^{\mu\nu\lambda ho}\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e}{}_{\mu\nu}u_{e}{}^{f\sigma}u_{f}{}^{g}{}_{\lambda}D_{ ho}T_{A,n,cdg\sigma}$		458
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-cf\mu}{}^{\lambda} D_{\lambda} T_{A,n,deg\nu}$	28	150	$i \epsilon^{\mu\nu\lambda ho} \epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^e{}_{\mu\nu} u^{fg}{}_{\lambda} u_{gf}{}^{\sigma} D_{ ho} T_{A,n,cde\sigma}$		459
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-cf\nu}{}^{\lambda} D_{\mu} T_{A,n,deg\lambda}$		151	$i \epsilon^{\mu u\lambda ho} \epsilon^{abc} ar{B}_a{}^d f_+{}^{ef}{}_{\mu u} u_{be\lambda} u_c{}^{g\sigma} D_{ ho} T_{A,n,dfg\sigma}$		460
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg u} f_{-cf u}{}^{\lambda} D_{\lambda} T_{A,n,deg\mu}$		152	$i \epsilon^{\mu u\lambda ho} \epsilon^{abc} ar{B}_a{}^d f_+{}^{ef}{}_{\mu u} u_{be\lambda} u_d{}^{g\sigma} D_ ho T_{A,n,cfg\sigma}$		461
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-df\mu}{}^{\lambda} D_{\nu} T_{A,n,ceg\lambda}$		153	$i \epsilon^{\mu u\lambda ho} \epsilon^{abc} ar{B}_a{}^d f_+{}^{ef}{}_{\mu u} u_{be\lambda} u_f{}^{g\sigma} D_ ho T_{A,n,cdg\sigma}$		462
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-df\mu}{}^{\lambda} D_{\lambda} T_{A,n,ceg\nu}$		154	$i\epsilon^{\mu u\lambda ho}\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef}{}_{\mu u}u_{be}{}^{\sigma}u_{c}{}^{g}{}_{\lambda}D_{ ho}T_{A,n,dfg\sigma}$		463
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-df\nu}{}^{\lambda} D_{\mu} T_{A,n,ceg\lambda}$		155	$i\epsilon^{\mu u\lambda ho}\epsilon^{abc}ar{B}_a{}^df_+{}^{ef}{}_{\mu u}u_{be}{}^{\sigma}u_d{}^g{}_{\lambda}D_{ ho}T_{A,n,cfg\sigma}$		464
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg u} f_{-df u}{}^{\lambda} D_{\lambda} T_{A,n,ceg\mu}$		156	$i \epsilon^{\mu u\lambda ho} \epsilon^{abc} ar{B}_a{}^d f_+{}^{ef}{}_{\mu u} u_{be}{}^{\sigma} u_f{}^g{}_{\lambda} D_{ ho} T_{A,n,cdg\sigma}$		465
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg u} f_{-ef\mu}{}^{\lambda} D_{\nu} T_{A,n,cdg\lambda}$		157	$i\epsilon^{\mu\nu\lambda ho}\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef}{}_{\mu\nu}u_b{}^g{}_{\lambda}u_{ge}{}^{\sigma}D_{ ho}T_{A,n,cdf\sigma}$		466
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-ef\mu}{}^{\lambda} D_{\lambda} T_{A,n,cdg\nu}$		158	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}f_{-c}{}^f{}_^\lambda D_ u T_{A,n,def\lambda}$	133	467
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg u} f_{-ef u}{}^{\lambda} D_{\mu} T_{A,n,cdg\lambda}$		159	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}f_{-c}{}^{f}{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,def u}$	134	468
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg u} f_{-ef u}{}^{\lambda} D_{\lambda} T_{A,n,cdg\mu}$		160	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}f_{-d}{}^f{}_^\lambda D_ u T_{A,n,cef\lambda}$	135	469
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-gf\mu}{}^{\lambda} D_{\nu} T_{A,n,cde\lambda}$		161	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}f_{-d}{}^f{}_^\lambda D_\lambda T_{A,n,cef u}$	136	470

TABLE VII. (Continued)

$\overline{P_n^{(N_f,4)}}$	SU(2)	SU(3)	$P_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\overline{\epsilon^{abc}\bar{B}_{a}}^{d}u_{b}{}^{e\mu}u^{fg\nu}f_{-af\mu}{}^{\lambda}D_{\lambda}T_{A.n.cde\nu}$		162	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu\nu}f_{-e}{}^f{}_{\mu}{}^{\lambda}D_{\nu}T_{A.n.cdf\lambda}$		471
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-gf\nu}{}^{\lambda} D_{\mu} T_{A,n,cde\lambda}$		163	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}f_{-e}{}^{f}{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,cdf u}$		472
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-gf\nu}{}^{\lambda} D_{\lambda} T_{A,n,cde\mu}$		164	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu u}f_{-be\mu}{}^{\lambda}D_{ u}T_{A,n,cdf\lambda}$		473
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} f_{-e}{}^{g\lambda\rho} D_{\mu\nu\lambda} T_{A,n,dfg\rho}$	29	165	$i\epsilon^{abc} \bar{B}_a{}^d f_+{}^{ef\mu u} f_{-be\mu}{}^\lambda D_\lambda T_{A,n,cdf u}$		474
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} f_{-c}{}^{g\lambda\rho} D_{\mu\nu\lambda} T_{A,n,efg\rho}$	30	166	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} f_{-c}{}^{f\lambda ho} \sigma_{\mu u} D_\lambda T_{A,n,def ho}$	137	475
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} f_{-e}{}^{g\lambda\rho} D_{\mu\nu\lambda} T_{A,n,cfg\rho}$		167	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} f_{-c}{}^{f\lambda ho} \sigma_{\mu\lambda} D_ u T_{A,n,def ho}$	138	476
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{e}{}^{f\nu}f_{-c}{}^{g\lambda\rho}D_{\mu\nu\lambda}T_{A,n,dfg\rho}$		168	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} f_{-d}{}^{f\lambda ho} \sigma_{\mu u} D_\lambda T_{A,n,cef ho}$	139	477
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}f_{-d}{}^{g\lambda\rho}D_{\mu\nu\lambda}T_{A,n,cfg\rho}$		169	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} f_{-d}{}^{f\lambda ho} \sigma_{\mu\lambda} D_ u T_{A,n,cef ho}$	140	478
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}f_{-f}{}^{g\lambda\rho}D_{\mu\nu\lambda}T_{A,n,cdg\rho}$		170	$i\epsilon^{abc}\bar{B}_a{}^df_{s,+}{}^{\mu u}f_{-b}{}^e{}_{\mu}{}^{\lambda}D_{ u}T_{A,n,cde\lambda}$	141	
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg u} f_{-cf}{}^{\lambda ho} D_{\mu\nu\lambda} T_{A,n,deg ho}$	31	171	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{s,+}{}^{\mu u}f_{-b}{}^{e}{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,cde u}$	142	
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-df}{}^{\lambda\rho} D_{\mu\nu\lambda} T_{A,n,ceg\rho}$		172	$\epsilon^{abc} \bar{B}_a{}^d f_{s,+}{}^{\mu\nu} f_{-b}{}^{e\lambda ho} \sigma_{\mu\lambda} D_{\nu} T_{A,n,cde ho}$	143	
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-ef}{}^{\lambda\rho} D_{\mu\nu\lambda} T_{A,n,cdg\rho}$		173	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} f_{-e}{}^{f\lambda ho} \sigma_{\mu u} D_\lambda T_{A,n,cdf ho}$		479
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} f_{-gf}{}^{\lambda\rho} D_{\mu\nu\lambda} T_{A,n,cde\rho}$		174	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} f_{-e}{}^{f\lambda ho} \sigma_{\mu\lambda} D_ u T_{A,n,cdf ho}$		480
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f u}f_{-d}{}^{g\lambda ho}\sigma_{\mu u}D_\lambda T_{A,n,efg ho}$	32	175	$e^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}f_{-be}{}^{\lambda ho}\sigma_{\mu u}D_{\lambda}T_{A,n,cdf ho}$		481
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f u}f_{-d}{}^{g\lambda ho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,efg ho}$	33	176	$e^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}f_{-be}{}^{\lambda ho}\sigma_{\mu\lambda}D_ u T_{A,n,cdf ho}$		482
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f u}f_{-e}{}^{g\lambda ho}\sigma_{\mu u}D_\lambda T_{A,n,dfg ho}$	34	177	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}h_{c}{}^{f}{}_{\mu}{}^{\lambda}D_{ u}T_{A,n,def\lambda}$	144	483
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}f_{-e}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,dfg\rho}$	35	178	$i\epsilon^{abc}ar{B}_a{}^df_{+b}{}^{e\mu u}h_c{}^f{}_^\lambda D_\lambda T_{A,n,def u}$	145	484
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f u}f_{-e}{}^{g\lambda ho}\sigma_{\mu\lambda}D_ ho T_{A,n,dfg u}$	36	179	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}h_d{}^f{}_^\lambda D_ u T_{A,n,cef\lambda}$	146	485
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f u}f_{-e}{}^{g\lambda ho}\sigma_{\nu\lambda}D_{\mu}T_{A,n,dfg ho}$	37	180	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}h_{d}{}^{f}{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,cef u}$	147	486
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f u}f_{-c}{}^{g\lambda ho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,efg ho}$	38	181	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}h_{e}{}^{f}{}_{\mu}{}^{\lambda}D_{ u}T_{A,n,cdf\lambda}$		487
$i\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u_{d}{}^{f\nu}f_{-c}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\rho}T_{A,n,efg\nu}$	39	182	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}h_{e}{}^{f}{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,cdf u}$		488
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f\nu}f_{-e}{}^{g\lambda\rho}\sigma_{\mu\nu}D_\lambda T_{A,n,cfg\rho}$		183	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu\nu}h_{be\mu}{}^{\lambda}D_{\nu}T_{A,n,cdf\lambda}$		489
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}f_{-e}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cfg\rho}$		184	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+}{}^{ef\mu\nu}h_{be\mu}{}^{\lambda}D_{\lambda}T_{A,n,cdf\nu}$		490
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_d{}^{f\nu}f_{-e}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_\rho T_{A,n,cfg\nu}$		185	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu\nu}h_{c}{}^{f\lambda\rho}D_{\mu\lambda\rho}T_{A,n,def\nu}$	148	491
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f\nu}f_{-e}{}^{g\lambda\rho}\sigma_{\nu\lambda}D_{\mu}T_{A,n,cfg\rho}$		186	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu\nu}h_{d}{}^{f\lambda\rho}D_{\mu\lambda\rho}T_{A,n,cef\nu}$	149	492
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_e{}^{f\nu}f_{-c}{}^{g\lambda\rho}\sigma_{\mu\nu}D_\lambda T_{A,n,dfg\rho}$		187	$i\epsilon^{abc}B_a{}^df_{+b}{}^{e\mu\nu}h_e{}^{f\lambda\rho}D_{\mu\lambda\rho}T_{A,n,cdf\nu}$		493
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_e{}^{f\nu}f_{-c}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,dfg\rho}$		188	$i\epsilon^{abc}B_{a}{}^{d}f_{+}{}^{ef\mu\nu}h_{be}{}^{\lambda\rho}D_{\mu\lambda\rho}T_{A,n,cdf\nu}$		494
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_e{}^{f\nu}f_{-c}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\rho}T_{A,n,dfg\nu}$		189	$\epsilon^{abc}B_a{}^df_{+b}{}^{e\mu\nu}h_c{}^{f\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,def\rho}$	150	495
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u_e{}^{f\nu}f_{-c}{}^{g\lambda\rho}\sigma_{\nu\lambda}D_{\mu}T_{A,n,dfg\rho}$		190	$\epsilon^{abc}B_a{}^df_{+b}{}^{e\mu\nu}h_c{}^{f\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,def\rho}$	151	496
$i\epsilon^{abc}B_a{}^au_b{}^{e\mu}u_e{}^{J\nu}f_{-d}{}^{g\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,cfg\rho}$		191	$\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}h_d{}^{J\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,cef\rho}$	152	497
$i\epsilon^{abc}B_a{}^au_b{}^{e\mu}u_e{}^{j\nu}f_{-d}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cfg\rho}$		192	$\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}h_d{}^{J\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cef\rho}$	153	498
$i\epsilon^{abc}B_a{}^au_b{}^{e\mu}u_e{}^{f\nu}f_{-d}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\rho}T_{A,n,cfg\nu}$		193	$\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}h_e{}^{f\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,cdf\rho}$		499
$i\epsilon^{abc}B_a{}^a u_b{}^{e\mu}u_e{}^{f\nu}f_{-d}{}^{g\lambda\rho}\sigma_{\nu\lambda}D_{\mu}T_{A,n,cfg\rho}$		194	$\epsilon^{abc}B_a{}^af_{+b}{}^{e\mu\nu}h_e{}^{J\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cdf\rho}$		500
$i\epsilon^{abc}B_a{}^au_b{}^{e\mu}u_e{}^{j\nu}f_{-f}{}^{g\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,cdg\rho}$		195	$\epsilon^{abc}B_a{}^af_+{}^{ej\mu\nu}h_{be}{}^{\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,cdf\rho}$		501
$i\epsilon^{abc}B_a{}^au_b{}^{e\mu}u_e{}^{j\nu}f_{-f}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cdg\rho}$		196	$\epsilon^{abc}B_a{}^af_+^{ej\mu\nu}h_{be}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cdf\rho}$	154	502
$i\epsilon^{a\nu\epsilon}B_a{}^a u_b{}^{\epsilon\mu}u_e{}^{j\nu}f_{-f}{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\rho}T_{A,n,cdg\nu}$		197	$i\epsilon^{abc}B_{a}^{a}\nabla^{\mu}f_{+b}^{e}{}_{\mu}^{\nu}u_{c}^{f\lambda}D_{\nu}T_{A,n,def\lambda}$	154	503
$i\epsilon^{abc}B_a{}^au_b{}^{e\mu}u_e{}^{j\nu}f_{-f}{}^{g\lambda\rho}\sigma_{\nu\lambda}D_{\mu}T_{A,n,cdg\rho}$		198	$i\epsilon^{abc}B_a^{a}\nabla^{\mu}f_{+b}^{e}{}_{\mu}^{\nu}u_c^{J\lambda}D_{\lambda}T_{A,n,def\nu}$	155	504
$i\epsilon^{abc}B_a{}^au_b{}^{e\mu}u^{Jg\nu}f_{-cf}{}^{\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,deg\rho}$	10	199	$i\epsilon^{abc}B_a{}^a\nabla^{\mu}f_{+b}{}^e_{\mu}{}^{\nu}u_d{}^{\prime\lambda}D_{\nu}T_{A,n,cef\lambda}$	156	505
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u^{fg\nu}f_{-cf}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,deg\rho}$	40	200	$i\epsilon^{abc}B_{a}{}^{d}\nabla^{\mu}f_{+b}{}^{e}{}_{\mu}{}^{\nu}u_{d}{}^{f\lambda}D_{\lambda}T_{A,n,cef\nu}$	157	506
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u^{fg\nu}f_{-cf}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\rho}T_{A,n,deg\nu}$	41	201	$i\epsilon^{abc}B_a{}^d\nabla^{\mu}f_{s,+\mu}{}^{\nu}u_b{}^{e\lambda}D_{\nu}T_{A,n,cde\lambda}$	158	
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u^{fg\nu}f_{-cf}{}^{\lambda\rho}\sigma_{\nu\lambda}D_{\mu}T_{A,n,deg\rho}$		202	$i\epsilon^{abc}B_a{}^a\nabla^\mu f_{s,+\mu}{}^ u_b{}^{e\lambda}D_\lambda T_{A,n,cde u}$	159	
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u^{fg\nu}f_{-df}{}^{\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,ceg\rho}$		203	$i\epsilon^{abc}B_a{}^d\nabla^{\mu}f_{s,+}{}^{\nu\lambda}u_b{}^e{}_{\mu}D_{\nu}T_{A,n,cde\lambda}$	160	
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u^{fg\nu}f_{-df}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,ceg\rho}$		204	$i\epsilon^{abc}B_{a}{}^{d}\nabla^{\mu}f_{s,+}{}^{\nu\lambda}u_{b}{}^{e}{}_{\nu}D_{\mu}T_{A,n,cde\lambda}$	161	
$i\epsilon^{abc}B_a{}^du_b{}^{e\mu}u^{fg\nu}f_{-df}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\rho}T_{A,n,ceg\nu}$		205	$i\epsilon^{abc}B_a{}^d\nabla^\mu f_{s,+}{}^{\nu\lambda}u_b{}^{e\rho}D_{\mu\nu\rho}T_{A,n,cde\lambda}$	162	
$i\epsilon^{a\nu c}B_a{}^au_b{}^{e\mu}u^{Jg\nu}f_{-df}{}^{\lambda\rho}\sigma_{\nu\lambda}D_{\mu}T_{A,n,ceg\rho}$		206	$\epsilon^{abc}B_a{}^a\nabla^{\mu}f_{s,+}{}^{\nu\lambda}u_b{}^{e\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,cde\rho}$	163	
$i\epsilon^{a\nu c}B_a{}^au_b{}^{e\mu}u^{Jg\nu}f_{-ef}{}^{\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,cdg\rho}$		207	$\epsilon^{abc}B_a{}^a\nabla^{\mu}f_{s,+}{}^{\nu\lambda}u_b{}^{e\rho}\sigma_{\mu\nu}D_{\rho}T_{A,n,cde\lambda}$	164	
$i\epsilon^{a\nu c}B_a{}^au_b{}^{e\mu}u^{Jg\nu}f_{-ef}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cdg\rho}$		208	$\epsilon^{abc}B_a{}^a\nabla^{\mu}f_{s,+}{}^{\nu\lambda}u_b{}^{e\rho}\sigma_{\mu\rho}D_{\nu}T_{A,n,cde\lambda}$	165	
$i\epsilon^{abc}B_a{}^a u_b{}^{e\mu}u^{fg\nu}f_{-ef}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\rho}T_{A,n,cdg\nu}$		209	$i\epsilon^{abc}B_a{}^d abla^\mu f_{+b}{}^e{}_^ u u_e{}^{f\lambda}D_ u T_{A,n,cdf\lambda}$		507

$P_n^{(N_f,4)}$	SU(2)	SU(3)	$P_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\overline{i\epsilon^{abc}\bar{B}_a}^d u_b^{\ e\mu} u^{fg\nu} f_{-ef}^{\ \lambda\rho} \sigma_{\nu\lambda} D_\mu T_{A,n,cdg\rho}$		210	$i\epsilon^{abc}\bar{B}_{a}{}^{d} abla^{\mu}f_{+b}{}^{e}{}_{\mu}{}^{ u}u_{e}{}^{f\lambda}D_{\lambda}T_{A,n,cdf u}$		508
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg u}f_{-gf}{}^{\lambda ho}\sigma_{\mu u}D_{\lambda}T_{A,n,cde ho}$		211	$i\epsilon^{abc}\bar{B}_{a}{}^{d} abla^{\mu}f_{+}{}^{ef}{}_{\mu}{}^{ u}u_{be}{}^{\lambda}D_{ u}T_{A,n,cdf\lambda}$		509
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg u}f_{-gf}{}^{\lambda ho}\sigma_{\mu\lambda}D_{ u}T_{A,n,cde ho}$		212	$i\epsilon^{abc}\bar{B}_{a}{}^{d} abla^{\mu}f_{+}{}^{ef}{}^{ u}u_{be}{}^{\lambda}D_{\lambda}T_{A,n,cdf u}$		510
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg\nu}f_{-qf}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\rho}T_{A,n,cde\nu}$		213	$i\epsilon^{abc}\bar{B}_{a}{}^{d}\nabla^{\mu}\nabla_{\mu}f_{+b}{}^{e\nu\lambda}\gamma_{5}\gamma_{\nu}T_{A,n,cde\lambda}$	166	511
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg u}f_{-gf}{}^{\lambda ho}\sigma_{\nu\lambda}D_{\mu}T_{A,n,cde ho}$		214	$i\epsilon^{abc}\bar{B}_{a}{}^{d} abla^{\mu} abla^{ u}f_{+b}{}^{e}{}_{\mu}{}^{\lambda}\gamma_{5}\gamma_{ u}T_{A,n,cde\lambda}$	167	512
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^f{}_{\mu} h_e{}^{g\nu\lambda} D_{\nu} T_{A,n,dfg\lambda}$	42	215	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} f_{+c}{}^f{}_^\lambda\gamma_5\gamma_ u T_{A,n,def\lambda}$	168	513
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} h_d{}^g{}_^\lambda D_\nu T_{A,n,efg\lambda}$	43	216	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{+d}{}^f_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cef\lambda}$	169	514
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} h_d{}^g{}_^\lambda D_\lambda T_{A,n,efg\nu}$	44	217	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{+e}{}^f{}_{\mu}{}^{\lambda}\gamma_5\gamma_{\nu}T_{A,n,cdf\lambda}$		515
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} h_e{}^g{}_{\mu}{}^{\lambda} D_{\nu} T_{A,n,dfq\lambda}$	45	218	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{+e}{}^{f}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A.n.cdf\nu}$		516
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} h_e{}^g{}_{\mu}{}^{\lambda} D_{\lambda} T_{A,n,dfa\nu}$	46	219	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{+c}{}^{f\lambda\rho} \gamma_5 \gamma_u D_{\nu\lambda} T_{A.n.def\rho}$	170	517
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} h_e{}^g{}_{\nu}{}^{\lambda} D_u T_{A,n,dfa\lambda}$	47	220	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{+d}{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,cef\rho}$	171	518
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}h_e{}^g{}_^\lambda D_\lambda T_{A,n,dfq\mu}$		221	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{s,+\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A.n.cde\lambda}$	172	
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^f{}_{\mu} h_c{}^{g\nu\lambda} D_{\nu} T_{A,n,efg\lambda}$	48	222	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} f_{s,+\mu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,cde u}$	173	
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^f{}_{\mu} h_e{}^{g\nu\lambda} D_{\nu} T_{A,n,cfg\lambda}$		223	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{s,+}{}^{\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,cde\rho}$	174	
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} h_e{}^g{}_^\lambda D_\nu T_{A,n,cfq\lambda}$		224	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{s,+}{}^{\lambda\rho} \gamma_5 \gamma_\lambda D_{\mu\rho} T_{A,n,cde\nu}$	175	
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} h_e{}^g{}_{\mu}{}^{\lambda} D_{\lambda} T_{A,n,cfg\nu}$		225	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{+e}{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,cdf\rho}$		519
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} h_e{}^g{}_^\lambda D_\mu T_{A,n,cfq\lambda}$		226	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} f_{+e}{}^{f\lambda\rho} \gamma_5 \gamma_\lambda D_{\mu\rho} T_{A.n.cdf\nu}$		520
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}h_e{}^g{}_^\lambda D_\lambda T_{A,n,cfg\mu}$		227	$\epsilon^{\mu\nu\lambda ho}\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e}{}_{\mu\nu}f_{+c}{}^{f}{}_{\lambda}{}^{\sigma}D_{ ho}T_{A,n,def\sigma}$	176	521
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^f{}_{\mu} h_c{}^{g\nu\lambda} D_{\nu} T_{A,n,dfq\lambda}$		228	$\varepsilon^{\mu\nu\lambda\rho}\varepsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e}{}_{\mu\nu}f_{s,+\lambda}{}^{\sigma}D_{\rho}T_{A,n,cde\sigma}$	177	
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^f{}_{\mu} h_d{}^{g\nu\lambda} D_{\nu} T_{A,n,cfa\lambda}$		229	$\varepsilon^{\mu\nu\lambda\rho}\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e}{}_{\mu\nu}f_{+e}{}^{f}{}_{\lambda}{}^{\sigma}D_{\rho}T_{A,n,cdf\sigma}$		522
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^f{}_\mu h_f{}^{g\nu\lambda} D_\nu T_{A,n,c,da\lambda}$		230	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} \chi_{+d}{}^g \gamma_5 \gamma_\mu T_{A,n,efa\nu}$	178	523
$\epsilon^{abc} \bar{B}_a^{\ d} u_b^{\ e\mu} u_e^{\ f\nu} h_c^{\ g}{}_{\mu}^{\ \lambda} D_{\nu} T_{A,n,dfa\lambda}$		231	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} \chi_{+e}{}^g \gamma_5 \gamma_u T_{A.n.dfav}$	179	524
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_c{}^g{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,dfq\nu}$		232	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} \chi_{+e}{}^g \gamma_5 \gamma_{\nu} T_{A,n,dfq\mu}$	180	525
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} h_c{}^g{}_{\nu}{}^{\lambda} D_{\mu} T_{A,n,dfa\lambda}$		233	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} \chi_{+c}{}^g \gamma_5 \gamma_\mu T_{A,n,efg\nu}$	181	526
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_d{}^g{}_{\mu}{}^{\lambda}D_{\nu}T_{A,n,cfq\lambda}$		234	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} \chi_{+e}{}^g \gamma_5 \gamma_\mu T_{A,n,cfq\nu}$		527
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_d{}^g{}_{\mu}{}^{\lambda}D_{\lambda}T_{A,n,cfq\nu}$		235	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} \chi_{+e}{}^g \gamma_5 \gamma_{\nu} T_{A,n,cfq\mu}$		528
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} h_d{}^g{}_^\lambda D_\mu T_{A,n,cfg\lambda}$		236	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} \chi_{+c}{}^g \gamma_5 \gamma_\mu T_{A,n,dfg\nu}$		529
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} h_f{}^g{}_^\lambda D_\nu T_{A,n,cdg\lambda}$		237	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} \chi_{+c}{}^g \gamma_5 \gamma_{\nu} T_{A,n,dfg\mu}$		530
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} h_f{}^g{}_{\mu}{}^{\lambda} D_{\lambda} T_{A,n,cda\nu}$		238	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} \chi_{+d}{}^g \gamma_5 \gamma_\mu T_{A,n,cfa\nu}$		531
$\epsilon^{abc} \bar{B}_a^{\ d} u_b^{\ e\mu} u_c^{\ f\nu} h_f^{\ g}^{\ \lambda} D_\mu T_{Ancda}$		239	$\epsilon^{abc} \bar{B}_a^{\ d} u_b^{\ e\mu} u_e^{\ f\nu} \gamma_{\pm d}^{\ g} \gamma_5 \gamma_{\mu} T_{ABC} f_{abc}$		532
$\epsilon^{abc} \bar{B}_a^{\ d} u_b^{\ e\mu} u_e^{\ f\nu} h_f^{\ g} \lambda D_\lambda T_A n cdau$		240	$\epsilon^{abc} \bar{B}_a^{\ d} u_b^{\ e\mu} u_e^{\ f\nu} \chi_{+f}^{\ g\gamma} \gamma_{\gamma} \chi_A n_c day$		533
$\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}u^{fg}{}_{\mu}h_{ef}{}^{\nu\lambda}D_{\nu}T_{A}ncda\lambda$		241	$\epsilon^{abc} \bar{B}_a^{\ d} u_b^{\ e\mu} u_e^{\ f\nu} \gamma_{\pm f}^{\ g} \gamma_5 \gamma_{\mu} T_{Ancda\mu}$		534
$\epsilon^{abc}\bar{B}_{a}^{\ d}u_{b}^{\ e\mu}u^{fg}_{\ \mu}h_{af}^{\ \nu\lambda}D_{\nu}T_{Ancde\lambda}$		242	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} \chi_{+cf} \gamma_5 \gamma_\mu T_{Andeau}$	182	535
$\epsilon^{abc}\bar{B}_{a}^{\ d}u_{b}^{\ e\mu}u^{fg\nu}h_{ef\mu}^{\ \lambda}D_{\nu}T_{Ancda\lambda}$		243	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} \chi_{+cf} \gamma_5 \gamma_{\nu} T_{A n \ degu}$		536
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} h_{ef\mu}{}^{\lambda} D_{\lambda} T_{A,n,cda\nu}$		244	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} \chi_{+df} \gamma_5 \gamma_\mu T_{A,n,ceau}$		537
$\epsilon^{abc} \bar{B}_a^{\ d} u_b^{\ e\mu} u_c^{\ f\nu} h_d^{\ g\lambda\rho} D_{\mu\lambda\rho} T_{A.n.efa\nu}$	49	245	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} \chi_{+df} \gamma_5 \gamma_{\nu} T_{A.n.ceau}$		538
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}h_e{}^{g\lambda\rho}D_{\mu\nu\lambda}T_{A,n,dfg\rho}$	50	246	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} \chi_{+ef} \gamma_5 \gamma_\mu T_{A,n,cdq\nu}$		539
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}h_e{}^{g\lambda\rho}D_{\mu\lambda\rho}T_{A,n,dfq\nu}$	51	247	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg u} \chi_{+ef} \gamma_5 \gamma_{\nu} T_{A,n,cdq\mu}$		540
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} h_e{}^{g\lambda\rho} D_{\nu\lambda\rho} T_{A,n,dfq\mu}$		248	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} \chi_{+af} \gamma_5 \gamma_\mu T_{A,n,cde\nu}$		541
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} h_c{}^{g\lambda\rho} D_{\mu\nu\lambda} T_{A,n,efg\rho}$	52	249	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg u} \chi_{+gf} \gamma_5 \gamma_{\nu} T_{A,n,cde\mu}$		542
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}h_e{}^{g\lambda\rho}D_{\mu\nu\lambda}T_{A,n,cfg\rho}$		250	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_c{}^{f\nu} \chi_{+,s} \gamma_5 \gamma_\mu T_{A,n,def\nu}$	183	543
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}h_e{}^{g\lambda\rho}D_{\mu\lambda\rho}T_{A,n,cfg\nu}$		251	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_d{}^{f\nu} \chi_{+,s} \gamma_5 \gamma_\mu T_{A,n,cef\nu}$	184	544
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}h_e{}^{g\lambda\rho}D_{\nu\lambda\rho}T_{A,n,cfg\mu}$		252	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f u} \chi_{+,s} \gamma_5 \gamma_\mu T_{A,n,cdf u}$		545
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_c{}^{g\lambda\rho}D_{\mu\nu\lambda}T_{A,n,dfg\rho}$		253	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f u} \chi_{+,s} \gamma_5 \gamma_{\nu} T_{A,n,cdf\mu}$		546
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} h_c{}^{g\lambda\rho} D_{\mu\lambda\rho} T_{A,n,dfg\nu}$		254	$\epsilon^{abc} ar{B}_a{}^d f_{-b}{}^{e\mu u} \chi_{+c}{}^f D_\mu T_{A,n,def u}$	185	547
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} h_d{}^{g\lambda\rho} D_{\mu\nu\lambda} T_{A,n,cfg\rho}$		255	$\epsilon^{abc} \bar{B}_a{}^d f_{-b}{}^{e\mu u} \chi_{+d}{}^f D_\mu T_{A,n,cef u}$	186	548
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} h_d{}^{g\lambda\rho} D_{\mu\lambda\rho} T_{A,n,cfg\nu}$		256	$\epsilon^{abc} \bar{B}_a{}^d f_{-b}{}^{e\mu u} \chi_{+e}{}^f D_\mu T_{A,n,cdf u}$		549
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f u} h_f{}^{g\lambda ho} D_{\mu u\lambda} T_{A,n,cdg ho}$		257	$\epsilon^{abc} ar{B}_a{}^d f{}^{ef\mu u} \chi_{+be} D_\mu T_{A,n,cdf u}$		550

$P_n^{(N_f,4)}$	SU(2)	SU(3)	$P_n^{(N_f,4)}$	SU(2)	<i>SU</i> (3)
$\overline{\epsilon^{abc}} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} h_f{}^{g\lambda\rho} D_{\mu\lambda\rho} T_{A,n,cdq\nu}$		258	$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu u} \chi_{+c}{}^f D_\mu T_{A,n.def u}$	187	551
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u_e{}^{f\nu} h_f{}^{g\lambda\rho} D_{\nu\lambda\rho} T_{A,n,cdg\mu}$		259	$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu u} \chi_{+d}{}^f D_\mu T_{A,n,cef u}$	188	552
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} h_{ef}{}^{\lambda\rho} D_{\mu\nu\lambda} T_{A,n,cdg\rho}$		260	$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu u} \chi_{+e}{}^f D_\mu T_{A,n,cdf u}$		553
$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} u^{fg\nu} h_{ef}{}^{\lambda\rho} D_{\mu\lambda\rho} T_{A,n,cdg\nu}$		261	$\epsilon^{abc} \bar{B}_a{}^d h^{ef\mu u} \chi_{+be} D_\mu T_{A,n,cdf u}$		554
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}h_d{}^{g\lambda\rho}\sigma_{\mu\nu}D_\lambda T_{A,n,efg\rho}$	53	262	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} abla^ u \chi_{+,s} D_\mu T_{A,n,cde u}$	189	555
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}h_d{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,efg\rho}$	54	263	$\epsilon^{abc} \bar{B}_a{}^d u_b{}^{e\mu} \nabla^{\nu} \chi_{+,s} D_{\nu} T_{A,n,cde\mu}$	190	556
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}h_e{}^{g\lambda\rho}\sigma_{\mu\nu}D_\lambda T_{A,n,dfg\rho}$	55	264	$\epsilon^{abc} \bar{B}_a{}^d abla^\mu abla^ u \chi_{+b}{}^e \gamma_5 \gamma_\mu T_{A,n,cde u}$	191	557
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}h_e{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,dfg\rho}$	56	265	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}\chi_{+c}{}^f\gamma_5\gamma_{\mu}T_{A.n.def u}$	192	558
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_c{}^{f\nu}h_e{}^{g\lambda\rho}\sigma_{\mu\lambda}D_\rho T_{A,n,dfg\nu}$	57	266	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}\chi_{+d}{}^f\gamma_5\gamma_{\mu}T_{A,n,cef u}$	193	559
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}h_e{}^{g\lambda\rho}\sigma_{\nu\lambda}D_\mu T_{A,n,dfg\rho}$	58	267	$i\epsilon^{abc}\bar{B}_a{}^df_{s,+}{}^{\mu u}\chi_{+b}{}^e\gamma_5\gamma_\mu T_{A,n,cde u}$	194	
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}h_e{}^{g\lambda\rho}\sigma_{\mu\nu}D_\lambda T_{A,n,cfg\rho}$		268	$i\epsilon^{abc}\bar{B}_a{}^df_{+b}{}^{e\mu u}\chi_{+e}{}^f\gamma_5\gamma_{\mu}T_{A,n,cdf u}$		560
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}h_e{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cfg\rho}$		269	$i\epsilon^{abc}\bar{B}_a{}^df_+{}^{ef\mu u}\chi_{+be}\gamma_5\gamma_{\mu}T_{A.n.cdf u}$		561
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_d{}^{f\nu}h_e{}^{g\lambda\rho}\sigma_{\mu\lambda}D_\rho T_{A,n,cfq\nu}$		270	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{+b}{}^{e\mu u}\chi_{+,s}\gamma_{5}\gamma_{\mu}T_{A,n,cde u}$	195	562
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f\nu}h_e{}^{g\lambda\rho}\sigma_{\nu\lambda}D_\mu T_{A,n,cfg\rho}$		271	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f u}\chi_{-d}{}^gD_{\mu}T_{A,n,efg u}$	196	563
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_c{}^{g\lambda\rho}\sigma_{\mu\nu}D_\lambda T_{A,n,dfg\rho}$		272	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f\nu}\chi_{-e}{}^gD_\mu T_{A,n,dfq\nu}$	197	564
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f\nu}h_c{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,dfg\rho}$		273	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f u}\chi_{-e}{}^gD_{\nu}T_{A,n,dfg\mu}$	198	565
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_c{}^{g\lambda\rho}\sigma_{\mu\lambda}D_\rho T_{A,n,dfq\nu}$		274	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f\nu}\chi_{-c}{}^gD_\mu T_{A,n,efg\nu}$	199	566
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_d{}^{g\lambda\rho}\sigma_{\mu\nu}D_\lambda T_{A,n,cfg\rho}$		275	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f\nu}\chi_{-e}{}^gD_\mu T_{A,n,cfq\nu}$		567
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_d{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cfg\rho}$		276	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f\nu}\chi_{-e}{}^gD_{\nu}T_{A,n,cfq\mu}$		568
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_d{}^{g\lambda\rho}\sigma_{\mu\lambda}D_\rho T_{A,n,cfq\nu}$		277	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f\nu}\chi_{-c}{}^gD_\mu T_{A,n,dfq\nu}$		569
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_f{}^{g\lambda\rho}\sigma_{\mu\nu}D_\lambda T_{A,n,cdq\rho}$		278	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f\nu}\chi_{-c}{}^gD_{\nu}T_{A,n,dfq\mu}$		570
$i\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}u_e{}^{f\nu}h_f{}^{g\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cdq\rho}$		279	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f\nu}\chi_{-d}{}^gD_\mu T_{A,n,cfq\nu}$		571
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f\nu}h_f{}^{g\lambda\rho}\sigma_{\mu\lambda}D_\rho T_{A,n,cdg\nu}$		280	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f u}\chi_{-d}{}^gD_{\nu}T_{A,n,cfg\mu}$		572
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f\nu}h_f{}^{g\lambda\rho}\sigma_{\nu\lambda}D_\mu T_{A,n,cdg\rho}$		281	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f\nu}\chi_{-f}{}^gD_{\mu}T_{A,n,cdq\nu}$		573
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg\nu}h_{ef}{}^{\lambda\rho}\sigma_{\mu\nu}D_{\lambda}T_{A,n,cdg\rho}$		282	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f u}\chi_{-f}{}^gD_{\nu}T_{A,n,cdg\mu}$		574
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg\nu}h_{ef}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\nu}T_{A,n,cdg\rho}$		283	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg u}\chi_{-cf}D_\mu T_{A,n,deg u}$	200	575
$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg\nu}h_{ef}{}^{\lambda\rho}\sigma_{\mu\lambda}D_{\rho}T_{A,n,cdq\nu}$		284	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg u}\chi_{-cf}D_{\nu}T_{A,n,deg\mu}$		576
$\epsilon^{abc} \bar{B}_a{}^d f_{-b}{}^{e\mu\nu} f_{-c}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,def\lambda}$	59	285	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg\nu}\chi_{-df}D_\mu T_{A,n,ceg\nu}$		577
$\epsilon^{abc} \bar{B}_a{}^d f_{-b}{}^{e\mu\nu} f_{-d}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cef\lambda}$	60	286	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg u}\chi_{-df}D_{\nu}T_{A,n,ceg\mu}$		578
$\epsilon^{abc} \bar{B}_a{}^d f_{-b}{}^{e\mu\nu} f_{-e}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A.n.cdf\lambda}$		287	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg\nu}\chi_{-ef}D_\mu T_{A,n,cdq\nu}$		579
$\epsilon^{abc} \bar{B}_a{}^d f_{-b}{}^{e\mu\nu} f_{-e}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,cdf\nu}$		288	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg u}\chi_{-ef}D_{\nu}T_{A,n,cdg\mu}$		580
$\epsilon^{abc} \bar{B}_a{}^d f_{-b}{}^{e\mu\nu} f_{-c}{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,def\rho}$	61	289	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg\nu}\chi_{-qf}D_\mu T_{A,n,cde\nu}$		581
$\epsilon^{abc} \bar{B}_a{}^d f_{-b}{}^{e\mu\nu} f_{-d}{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,cef\rho}$	62	290	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u^{fg u}\chi_{-qf}D_{\nu}T_{A,n,cde\mu}$		582
$\epsilon^{abc}\bar{B}_a{}^df_{-b}{}^{e\mu\nu}f_{-e}{}^{f\lambda\rho}\gamma_5\gamma_\mu D_{\nu\lambda}T_{A,n,cdf\rho}$		291	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_c{}^{f u}\chi_{-,s}D_\mu T_{A,n,def u}$	201	583
$\epsilon^{abc}\bar{B}_a{}^df_{-b}{}^{e\mu\nu}f_{-e}{}^{f\lambda\rho}\gamma_5\gamma_\lambda D_{\mu\rho}T_{A,n,cdf\nu}$		292	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_d{}^{f u}\chi_{-,s}D_\mu T_{A,n,cef u}$	202	584
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-c}{}^f_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,def\lambda}$	63	293	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f u}\chi_{-,s}D_\mu T_{A,n,cdf u}$		585
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-c}{}^f_{\mu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,def\nu}$	64	294	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}u_e{}^{f u}\chi_{-,s}D_{\nu}T_{A,n,cdf\mu}$		586
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-d}{}^f_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cef\lambda}$	65	295	$i\epsilon^{abc}\bar{B}_a{}^df_{-b}{}^{e\mu\nu}\chi_{-c}{}^f\gamma_5\gamma_\mu T_{A,n,def\nu}$	203	587
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-d}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,cef\nu}$	66	296	$i\epsilon^{abc}\bar{B}_{a}{}^{d}f_{-b}{}^{e\mu u}\chi_{-d}{}^{f}\gamma_{5}\gamma_{\mu}T_{A.n.cef u}$	204	588
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-e}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cdf\lambda}$		297	$i\epsilon^{abc}\bar{B}_a{}^df_{-b}{}^{e\mu\nu}\chi_{-e}{}^f\gamma_5\gamma_\mu T_{A,n,cdf\nu}$		589
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-e}{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A,n,cdf\nu}$		298	$i\epsilon^{abc}\bar{B}_a{}^df{}^{ef\mu u}\chi_{-be}\gamma_5\gamma_{\mu}T_{A,n,cdf u}$		590
$\epsilon^{abc} \bar{B}_a{}^d h^{ef\mu\nu} f_{-be\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A.n.cdf\lambda}$		299	$i\epsilon^{abc}\bar{B}_{a}{}^{d}h_{b}{}^{e\mu\nu}\chi_{-c}{}^{f}\gamma_{5}\gamma_{\mu}T_{A.n.def\nu}$	205	591
$\epsilon^{abc} \bar{B}_a{}^d h^{ef\mu\nu} f_{-be\mu}{}^{\lambda} \gamma_5 \gamma_{\lambda} T_{A.n.cdf\nu}$		300	$i\epsilon^{abc}\bar{B}_{a}{}^{d}h_{b}{}^{e\mu u}\chi_{-d}{}^{f}\gamma_{5}\gamma_{\mu}T_{A,n,cef u}$	206	592
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-c}{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,def\rho}$	67	301	$i\epsilon^{abc}\bar{B}_a{}^dh_b{}^{e\mu u}\chi_{-e}{}^f\gamma_5\gamma_{\mu}T_{A,n,cdf u}$		593
$\epsilon^{abc}\bar{B}_{a}{}^{d}h_{b}{}^{e\mu\nu}f_{-c}{}^{f\lambda\rho}\gamma_{5}\gamma_{\lambda}D_{\mu\nu}T_{A,n,def\rho}$	68	302	$i\epsilon^{abc}\bar{B}_a{}^d h^{ef\mu u}\chi_{-be}\gamma_5\gamma_\mu T_{A,n.cdf u}$		594
$\epsilon^{abc}\bar{B}_{a}{}^{d}h_{b}{}^{e\mu\nu}f_{-c}{}^{f\lambda\rho}\gamma_{5}\gamma_{\lambda}D_{\mu\rho}T_{A,n,def\nu}$	69	303	$i\epsilon^{abc}\bar{B}_a{}^df_{-b}{}^{e\mu u}\chi_{-,s}\gamma_5\gamma_{\mu}T_{A,n,cde u}$	207	595
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-d}{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,cef\rho}$	70	304	$i\epsilon^{abc}\bar{B}_a{}^dh_b{}^{e\mu u}\chi_{-,s}\gamma_5\gamma_\mu T_{A,n,cde u}$	208	596
$\epsilon^{abc}\bar{B}_{a}{}^{d}h_{b}{}^{e\mu\nu}f_{-d}{}^{f\lambda\rho}\gamma_{5}\gamma_{\lambda}D_{\mu\nu}T_{A,n,cef\rho}$	71	305	$i\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}\nabla^{\nu}\chi_{-c}{}^{f}\gamma_{5}\gamma_{\mu}T_{A,n,def\nu}$	209	597

$\overline{P_n^{(N_f,4)}}$	SU(2)	SU(3)	$P_n^{(N_f,4)}$	SU(2)	SU(3)
$\overline{\epsilon^{abc}\bar{B}_a}^d h_b{}^{e\mu\nu} f_{-d}{}^{f\lambda\rho} \gamma_5 \gamma_\lambda D_{\mu\rho} T_{A.n.cef\nu}$	72	306	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}\nabla^{\nu}\chi_{-c}{}^f\gamma_5\gamma_{\nu}T_{A.n.defu}$	210	598
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-e}{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,cdf\rho}$		307	$i\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}\nabla^{\nu}\chi_{-d}{}^{f}\gamma_{5}\gamma_{\mu}T_{A,n,cef\nu}$	211	599
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-e}{}^{f\lambda\rho} \gamma_5 \gamma_\lambda D_{\mu\nu} T_{A,n,cdf\rho}$		308	$i\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}\nabla^{\nu}\chi_{-d}{}^{f}\gamma_{5}\gamma_{\nu}T_{A,n,cef\mu}$	212	600
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} f_{-e}{}^{f\lambda\rho} \gamma_5 \gamma_\lambda D_{\mu\rho} T_{A.n.cdf\nu}$		309	$i\epsilon^{abc}\bar{B}_{a}{}^{d}u_{b}{}^{e\mu}\nabla^{\nu}\chi_{-e}{}^{f}\gamma_{5}\gamma_{\mu}T_{A.n.cdf\nu}$		601
$\epsilon^{abc} \bar{B}_a{}^d h^{ef\mu\nu} f_{-be}{}^{\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,cdf\rho}$		310	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}\nabla^{\nu}\chi_{-e}{}^f\gamma_5\gamma_{\nu}T_{A,n,cdf\mu}$		602
$\epsilon^{abc} \bar{B}_a{}^d h^{ef\mu\nu} f_{-be}{}^{\lambda\rho} \gamma_5 \gamma_\lambda D_{\mu\nu} T_{A,n,cdf\rho}$		311	$i\epsilon^{abc}\bar{B}_a{}^d u^{ef\mu}\nabla^{\nu}\chi_{-be}\gamma_5\gamma_{\mu}T_{A,n,cdf\nu}$		603
$\epsilon^{abc} \bar{B}_a{}^d h^{ef\mu\nu} f_{-be}{}^{\lambda\rho} \gamma_5 \gamma_\lambda D_{\mu\rho} T_{A,n,cdf\nu}$		312	$i\epsilon^{abc}\bar{B}_{a}{}^{d}u^{ef\mu}\nabla^{\nu}\chi_{-be}\gamma_{5}\gamma_{\nu}T_{A,n,cdf\mu}$		604
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} h_c{}^f{}_^\lambda\gamma_5\gamma_\nu T_{A,n,def\lambda}$	73	313	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}\nabla^{\nu}\chi_{-,s}\gamma_5\gamma_{\mu}T_{A,n,cde\nu}$	213	605
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} h_d{}^f{}_{\mu}{}^{\lambda} \gamma_5 \gamma_{\nu} T_{A,n,cef\lambda}$	74	314	$i\epsilon^{abc}\bar{B}_a{}^du_b{}^{e\mu}\nabla^{\nu}\chi_{-,s}\gamma_5\gamma_{\nu}T_{A,n,cde\mu}$	214	606
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} h_e{}^f{}_^\lambda \gamma_5 \gamma_\nu T_{A,n,cdf\lambda}$		315	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu\nu} \chi_{-c}{}^f D_\mu T_{A,n,def\nu}$	215	607
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} h_e{}^f{}_^\lambda \gamma_5 \gamma_\lambda T_{A,n,cdf\nu}$		316	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} \chi_{-d}{}^f D_\mu T_{A,n,cef u}$	216	608
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} h_c{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,def\rho}$	75	317	$\epsilon^{abc} \bar{B}_a{}^d f_{s,+}{}^{\mu\nu} \chi_{-b}{}^e D_\mu T_{A,n,cde\nu}$	217	
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} h_d{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,cef\rho}$	76	318	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} \chi_{-e}{}^f D_\mu T_{A,n,cdf u}$		609
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} h_e{}^{f\lambda\rho} \gamma_5 \gamma_\mu D_{\nu\lambda} T_{A,n,cdf\rho}$		319	$\epsilon^{abc} \bar{B}_a{}^d f_+{}^{ef\mu u} \chi_{-be} D_\mu T_{A,n,cdf u}$		610
$\epsilon^{abc} \bar{B}_a{}^d h_b{}^{e\mu\nu} h_e{}^{f\lambda\rho} \gamma_5 \gamma_\lambda D_{\mu\nu} T_{A,n,cdf\rho}$		320	$\epsilon^{abc} \bar{B}_a{}^d f_{+b}{}^{e\mu u} \chi_{-,s} D_\mu T_{A,n,cde u}$	218	611
$\epsilon^{abc}\bar{B}_a{}^d u_b{}^{e\mu}\nabla_{\mu}f_{-c}{}^{f\nu\lambda}\gamma_5\gamma_{\nu}T_{A,n,def\lambda}$	77	321			

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