



# **EWG VERIFIED™:** **BABY DIAPERS**

## Acceptable Dyes & Pigments

The dyes and pigments listed in this document are permitted for use in **EWG VERIFIED™** diapers, provided the company can substantiate that they meet the associated restrictions.

Dye/Pigment	Color Index	Synonym(s)	EWG Restrictions
Algal Carotenes	75130	CI Food Orange 5	No more than Lead 2 ppm; No more than natural tocopherols in edible oil 0.3% <sup>1</sup> ; No more than loss of weight on drying 0.2%, residue on ignition 0.2%, Arsenic 3 ppm <sup>4</sup>
Alkali extracted Annatto	75120	CI Natural Orange 4	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm <sup>3</sup>
Allura Red AC	16035	CI Food Red 17; FD&C Red No. 40	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm; No more than water insoluble matter 0.2%, subsidiary coloring matters 3.0%, 6-hydroxy-2-naphthalene sulfonic acid, sodium salt 0.3%, 4-amino-5-methoxy-2-methyl-benzene sulfonic acid 0.2%, 6,6-oxybis (2-naphthalene sulfonic acid) disodium salt 1.0%, unsulfonated primary aromatic amines 0.01% (calculated as aniline), ether extractable matter 0.2% (from a solution of pH 7) <sup>3</sup> ; No more than sum of volatile matter (at 135 °C.) and chlorides and sulfates (calculated as sodium salts) 14%, higher sulfonated subsidiary colors (as sodium salts) 1%, lower sulfonated subsidiary colors (as sodium salts) 1%, disodium salt of 6-hydroxy-5-[(2-methoxy-5-methyl-4-sulphophenyl) azo]-8-(2-methoxy-5-methyl-4-sulphophenoxy)-2-naphthalenesulfonic acid 1%; No less than total color 85% <sup>5</sup>
Aluminum	77000	CI Pigment Metal	No more than Arsenic 3 ppm, Lead 10 ppm, Mercury 1 ppm, Cadmium 1 ppm; No more than loss on drying 0.5% (105 °C, to constant weight) <sup>3</sup> ; Not less than aluminum 99% <sup>4</sup>
Ammonia caramel		Caramel III	No more than Arsenic 1 ppm, Lead 2 ppm, Cadmium 1 ppm, 4-methylimidazole 200 ppm, 2-acetyl-4-tetrahydroxy-butylimidazole 10 ppm; No more than color bound by DEAE cellulose 50%, ammoniacal nitrogen 0.3%, total sulfur 0.2%; Color bound by phosphoryl cellulose more than 50%; Absorbance ratio of color bound by phosphoryl cellulose between 13 and 35; Color intensity between 0.08 and 0.36; Total nitrogen between 0.7% and 3.3% <sup>3</sup> ; No more than Mercury 0.1 ppm <sup>4</sup>
Ammonium manganese(3+) diphosphate	77742	Manganese violet	No less than Ash (at 600 °C) 81%; No more than volatile matter (at 135 °C for 3 hours) 1%, water soluble substances 6%, total color (based on Mn content in "as is" sample) 93% Lead 20 ppm, Arsenic 3 ppm, Mercury 1 ppm; pH of filtrate of 10 grams color additive (shaken occasionally for 2 hours with 100 milliliters of freshly boiled distilled water) between 4.7 and 2.5 <sup>4</sup>
Anthocyanin (from grape extract)			No more than Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm, Sulfur dioxide 1,000 ppm per percent pigment, Methanol 50 ppm, Ethanol 200 ppm <sup>3</sup> ; No more than Arsenic 1 ppm; No more pesticide residues than permitted in or on grapes by regulations promulgated under section 408 of the Federal Food, Drug, and Cosmetic Act. <sup>4</sup>
Beta-apo-8'-carotenal (C 30)	40820	CI Food Orange 6	No more than Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm; No more than sulfated ash 0.1%, subsidiary coloring matters 3.0% of total coloring matter (carotenoids other than $\beta$ -apo-8'-carotenal) <sup>3</sup> ; No more than Arsenic 1 ppm, residue on ignition 0.2%, loss of weight on drying 0.2% <sup>4</sup>
Beta-Carotene	40800	CI Food Orange 5	No more than Lead 2 ppm; No more than sulfated ash 0.1%, subsidiary coloring matters 3% of total coloring matters (carotenoids other than beta-carotene) <sup>3</sup> ; No more than Arsenic 3 ppm, residue on ignition 0.2%, loss of weight on drying 0.2% <sup>4</sup>
Beta-Carotene from <i>Blakeslea trispora</i>	40800	CI Food Orange 5	No more than Lead 2 ppm; No more than 0.8% singly or in combination of the following: Ethyl acetate, Ethanol; No more than Isobutyl acetate 1.0%, Propan-2-ol 0.2%, subsidiary coloring matters 3% of total coloring matters (carotenoids other than beta-carotene), sulfated ash 0.2% <sup>1</sup> ; No more than Arsenic 3 ppm, residue on ignition 0.2%, loss of weight on drying 0.2% <sup>4</sup>
Brilliant Blue FCF	42090	CI Food Blue 2; FD&C No. Blue 1	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm; No more than water insoluble matter 0.2%, subsidiary coloring matters 6.0%, 3-((ethyl)(4-sulphophenyl) amino) methyl benzene sulfonic acid 0.3%, leuco base 5.0%, unsulfonated primary aromatic amines 0.01% (calculated as aniline), ether extractable matter 0.2% (at pH 7); No more than sum of 2-, 3- and 4-formyl benzene sulfonic acids 1.5% <sup>3</sup> ; No more than sum of volatile matter (at 135 °C) and chlorides and sulfates (calculated as sodium salts) 15%, Chromium 50 ppm, Manganese 100 ppm; Not less than total color 85% <sup>5</sup>
Calcium carbonate	77220	CI Pigment White 18; Chalk	No more than Arsenic 3 ppm, Lead 3 ppm, Cadmium 1 ppm, Fluoride 50 ppm; No more than loss on drying 2.0% (200 °C, 4 hours), Acid-insoluble substances 0.2%, Magnesium and alkali salts 1%; No more than 100 ppm singly or in combination of the following: Antimony, Copper, Chromium, Zinc, Barium <sup>3</sup>
Canthaxanthin	40850	CI Food Orange 8	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm; No more than sulfated ash 0.1%, subsidiary coloring matters 5.0% of total coloring matter (carotenoids other than canthaxanthin) <sup>3</sup> ; No more than loss on drying 0.2%, residue on ignition 0.2% <sup>4</sup>

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Carminic acid, Carmines	75470	CI Natural Red 4	No more than Arsenic 1 ppm, Lead 1.5 ppm, Mercury 0.5 ppm, Cadmium 0.5 ppm, Ethanol 150 ppm, Methanol 50 ppm; Matter insoluble in dilute ammonia: no more than carmine 1%; No more than 4-aminocarminic acid 3 % relative to carminic acid; Total ash: no more than Carminic acid 5%, Carmine 12%; Protein (N x 6.25): Carminic acid 2.2%, Carmine 25% <sup>3</sup> ; No more than volatile matter 20% (at 135 °C. for 3 hours) <sup>4</sup>
Caustic sulphite caramel		Caramel II	No more than Arsenic 1 ppm, Lead 2 ppm, Cadmium 1 ppm; More than color bound by DEAE cellulose 50%, sulfur bound by DEAE cellulose 40%; No more than total nitrogen 0.3%, sulfur dioxide 0.2%; Absorbance ratio of color bound by DEAE cellulose between 19 and 34; Color intensity between 0.05 and 0.13; Total sulfur between 0.3% and 3.5%; Absorbance ratio ( $A_{280/560}$ ) greater than 50 <sup>3</sup> ; No more than Mercury 0.1 ppm <sup>4</sup>
Copper complexes of chlorophyllins	75815	Sodium Copper Chlorophyllin; Potassium Copper Chlorophyllin; CI Natural Green 5	No more than Arsenic 3 ppm, Lead 5 ppm, Cadmium 1 ppm, Copper ions 200 ppm, Dichloromethane 10 ppm; No more than total copper pheophytins 8.0%; No more than 50 ppm singly or in combination of the following: Acetone, Methyl Ethyl ketone, Methanol, Ethanol, Propan-2-ol, Hexane <sup>1</sup> ; No more than Mercury 0.5 ppm, moisture 5%; Total copper between 4% and 6%; Ratio of absorbance at 405 nanometers (nm) to absorbance at 630 nm between 3.4 and 3.9; No less than total copper chlorophyllins 95% (dried at 100 °C for 1 hour) <sup>4</sup>
Curcumin	75300	CI Natural Yellow 3; Turmeric Yellow; Diferoyl Methane	No more than Arsenic 3 ppm, Lead 10 ppm, Mercury 1 ppm, Cadmium 1 ppm, Dichloromethane 10 ppm; No more than 50 ppm singly or in combination of the following: Ethylacetate, Acetone, n-butanol, Methanol, Ethanol, Hexane, Propan-2-ol <sup>3</sup>
Disodium 2,2'-(9,10-dioxoanthracene-1,4-diylidimino)bis(5-methylsulphonate)	61570	D&C Green No. 5	No more than sum of volatile matter (at 135 °C) and chlorides and sulfates (calculated as sodium salts) 20%, water-insoluble matter 0.2%, 1,4-Dihydroxyanthraquinone 2%, total sulfonated toluidines 0.2%, p-Toluidine 0.0015%, sum of monosulfonated D&C Green No. 6 and Ext. D&C Violet No. 2 3%, Lead 20 ppm, Arsenic 3 ppm, Mercury 1 ppm; No less than total color 80% <sup>5</sup>
Ferric Ammonium Ferrocyanide	77510		No detectable cyanide ions <sup>2</sup> ; No more than oxalic acid or its salts 0.1%, water soluble matter 3 %, total iron (as Fe corrected for volatile matter) between 33% and 39%, volatile matter 4 %; No more Lead 20 ppm, Arsenic 3 ppm, Nickel 200 ppm, Cobalt 200 ppm, Mercury 1 ppm <sup>4</sup>
Fruit juice			–
Indigotine, Indigo carmine	73015	CI Food Blue 1, FD&C Blue No. 2	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm; No more than water insoluble matter 0.2%, subsidiary coloring matters 1.0% (excluding disodium 3,3'-dioxo-2,2'-bi-indolylidene-5,7'-disulfonate), unsulfonated primary aromatic amines 0.01% (calculated as aniline), ether extractable matter 0.2 % (from a solution of pH 7); Total no more than 0.5% of the following: Isatin-5-sulfonic acid, 5-sulfoanthranilic acid, Anthranilic acid <sup>3</sup> ; No more than sum of volatile matter (at 135 °C) and chlorides and sulfates (calculated as sodium salts) 15%, disodium salt of 2-(1,3-dihydro-3-oxo-7-sulfo-2H-indol-2-ylidene)-2,3-dihydro-3-oxo-1H-indole-5-sulfonic acid 18%, sodium salt of 2-(1,3-dihydro-3-oxo-2H-indol-2-ylidene)-2,3-dihydro-3-oxo-1H-indole-5-sulfonic acid 2%; No less than total color 85% <sup>5</sup>
Iron oxide	77489		No more than Arsenic 3 ppm, Lead 10 ppm, Mercury 3 ppm <sup>4</sup>
Iron oxides and hydroxides	77492, 77491, 77499	Iron Oxide Yellow: CI Pigment Yellow 42 and 43; Iron Oxide Red: CI Pigment Red 101 and 102; Iron Oxide Black: CI Pigment Black 11	No more than Arsenic 3 ppm, Lead 10 ppm, Mercury 1 ppm, Cadmium 1 ppm, Chromium 100 ppm, Copper 50 ppm, Nickel 200 ppm, Zinc 100 ppm (all by total dissolution); No more than water soluble matter 1.0% <sup>3</sup>
Lazurite	77007		No more than Lead 20 ppm, Arsenic 3 ppm, Mercury 1 ppm <sup>4</sup>
Litholrubine BK	15850:1	CI Pigment Red 57; Rubinpigment; Carmine 6B; D&C Red 7	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm; No more than subsidiary coloring matters 0.5%, 2-Amino-5-methylbenzenesulfonic acid, calcium salt 0.2%, 3-hydroxy-2-naphthalenecarboxylic acid, calcium salt 0.4%, unsulfonated primary aromatic amines 0.01% (calculated as aniline), ether extractable matter 0.2 % (from a solution of pH 7) <sup>3</sup> ; No more than sum of volatile matter (at 135 °C) and chlorides and sulfates (calculated as sodium salts) 10%, 1-[(4-methylphenyl)azo]-2-naphthalenol 0.015%, 3-Hydroxy-4-[(4-methylphenyl)azo]-2-naphthalenecarboxylic acid, calcium salt 0.5%, p-Toluidine, not more than 15 ppm; No less than total color 90% <sup>5</sup>
Lycopene from red tomatoes	75125	Natural Yellow 27	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm; No more than 50 ppm singly or in combination of the following: Acetone, Ethylacetate, Methanol, Propan-2-ol, Hexane, Ethanol; No more than sulfated ash 1% <sup>1</sup> ; No less than lycopene oleoresin 5.5%, lycopene concentrate 60% <sup>4</sup>
Oil extracted Annatto	75120	CI Natural Orange 4	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm <sup>3</sup>

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Paprika extract, capsanthin, capsorubin		Paprika Oleoresin	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm, Capsaicin 250 ppm, Dichloromethane 10 ppm; No more than 50 ppm singly or in combination of the following: Ethyl Acetate, Acetone, Methanol, Ethanol, Propan-2-ol, Hexane <sup>3</sup>
Plain caramel		Caustic caramel; Caramel I	No more than Arsenic 1 ppm, Lead 2 ppm, Cadmium 1 ppm; No more than color bound by DEAE cellulose 50%, color bound by phosphoryl cellulose 50%, total nitrogen 0.1%, total sulfur 0.2%; Color intensity between 0.01 and 0.12 <sup>3</sup> ; No more than Mercury 0.1 ppm <sup>4</sup>
Plant Carotene	75130	CI Food Orange 5	No more than Lead 2 ppm, Dichloromethane 10 ppm; No more than 50 ppm singly or in combination of the following: Acetone, Methyl Ethyl ketone, Methanol, Propan-2-ol, Hexane, Ethanol <sup>3</sup> ; No more than loss of weight on drying 0.2%, residue on ignition 0.2%, Arsenic 3 ppm <sup>4</sup>
Riboflavin		Lactoflavin	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm, Primary aromatic amines 100 ppm (calculated as aniline); No more than loss on drying 1.5% (105 °C, 4 hours), sulfated ash 0.1% <sup>3</sup> ; No more than 9.3% residue on ignition <sup>4</sup>
Riboflavin-5'-phosphate		Riboflavin-5'-phosphate sodium	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm, primary aromatic amines 70 ppm (calculated as aniline); No more than sulfated ash 25%, inorganic phosphate 1.0% (calculated as PO <sub>4</sub> on the anhydrous basis), riboflavin (free) subsidiary coloring matters 6%, riboflavine diphosphate subsidiary coloring matters 6% <sup>1</sup> ; No more loss on drying 7%, residue on ignition 25%; pH of a 1 in 100 solution between 5.0 and 6.5 <sup>4</sup>
Saffron			--
Solvent-extracted Bixin and Norbixin	75120	CI Natural Orange 4	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm, Dichloromethane 10 ppm; No more than 50 ppm singly or in combination of the following: Acetone, Methanol, Hexane <sup>1</sup>
Spirulina extract			No more than Lead 2 ppm, Arsenic 2 ppm, Mercury 1 ppm; Negative for microcystin toxin <sup>4</sup>
Sulphite ammonia caramel		Caramel IV	No more than Arsenic 1 ppm, Lead 2 ppm, Cadmium 1 ppm, 4-methylimidazole 250 ppm; Color bound by DEAE cellulose more than 50%; Color intensity between 0.10 and 0.60; No more than Ammoniacal nitrogen 0.6%, Sulfur dioxide 0.2%; Total nitrogen between 0.3% and 1.7%; Total sulfur between 0.8% and 2.5%; Nitrogen/sulfur ratio of alcohol precipitate between 0.7 and 2.7; Absorbance ratio of alcohol precipitate between 8 to 14; Absorbance ratio (A <sub>280/560</sub> ) no more than 50 <sup>3</sup> ; No more than Mercury 0.1 ppm <sup>4</sup>
Sunset Yellow FCF/Orange Yellow S	15985	CI Food Yellow 3; Orange Yellow S; FD&C Yellow No. 6	No more than Arsenic 3 ppm, Lead 2 ppm, Mercury 1 ppm, Cadmium 1 ppm, 1-(Phenylazo)-2-naphthalenol (Sudan I) 0.5 ppm; No more than water insoluble matter 0.2%, subsidiary coloring matters 5.0%, ether extractable matter 0.2% (under neutral conditions); Total no more than 0.5% of the following: 4-aminobenzene-1-sulfonic acid, 3-hydroxynaphthalene-2,7-disulfonic acid, 6-hydroxynaphthalene-2-sulfonic acid, 7-hydroxynaphthalene-1,3-disulfonic acid, 4,4'-diazoaminodi(benzene sulfonic acid), 6,6'-oxydi(naphthalene-2-sulfonic acid) <sup>1,3</sup> ; No more than sum of volatile matter (at 135 °C) and chlorides and sulfates (calculated as sodium salts) 13%, unsulfonated primary aromatic amines (calculated as aniline) 250 ppb, disodium salt of 4,4'-(1-triazene-1,3-diyl)bis[benzenesulfonic acid] 0.1%, sum of the sodium salt of 6-hydroxy-5-(phenylazo)-2-naphthalenesulfonic acid and the sodium salt of 4-[(2-hydroxy-1-naphthalenyl)azo]benzenesulfonic acid 1%, sum of the trisodium salt of 3-hydroxy-4-[(4-sulfophenyl)azo]-2,7-naphthalenedisulfonic acid and other higher sulfonated subsidiaries 5%, 4-Aminoazobenzene 50 ppb, 4-Aminobiphenyl 15 ppb, Azobenzene 200 ppb, Benzidine 1 ppb, 1,3-Diphenyltriazene 40 ppm; No less than total color 87% <sup>5</sup>
Titanium dioxide	77891	CI Pigment White 6	No more than Arsenic 1 ppm, Lead 10 ppm, Mercury 1 ppm, Cadmium 1 ppm, Antimony 2 ppm (after an extraction with 0.5 N HCl for all metals listed); No more than loss on drying 0.5% (105 °C, 3 hours), aluminium oxide and/or silicon dioxide 2.0% <sup>3</sup> ; No more than loss on ignition 0.5% (at 800 °C. after drying for 3 hours at 105 °C), water soluble substances 0.3%, acid soluble substances 0.5%; No less than TiO <sub>2</sub> 99.0% (after drying for 3 hours at 105 °C) <sup>4</sup>
Vegetable juice			--
Zinc oxide	77947		No less than Zinc oxide 99%; No more than loss on ignition 1% (at 800 °C), Cadmium 15 ppm, Mercury 1 ppm, Arsenic 3 ppm, Lead 20 ppm <sup>4</sup>

(1) Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annex II and III to Regulation (EC) No. (2) Regulation (EC) No 1223/2009 of the European Parliament and of the Council of 30 November 2009 on cosmetic products

(3) Restrictions from both Commission Regulation (EU) No 231/2012 and Regulation (EC) No 1223/2009

(4) CFR Title 21 - Food and Drugs: Part 73

(5) CFR Title 21 - Food and Drugs: Part 74

Key:

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