

Polypropylene


All Polypropylene Products

Effective Date: January 25, 2014

Various Substances not in Polypropylene

Total Petrochemicals & Refining USA, Inc. (TPRI) hereby certifies that **polypropylene** products, as supplied by TPRI, are not intentionally formulated to contain the following substances:

Substance or Class of Substance	CAS No.
1. Acetaldehyde	75-07-0
2. Acrylamide	79-06-01
3. Adipate esters (esters of adipic acid – CAS No. 124-04-9)	
4. Alkylphenols and Alkylphenol ethoxylates ^A	
5. Aromatic Amines (Arylamines) ^B	
6. Asbestos Fibers	
7. Azocolorants, Azo Dyes, Azo Compounds ^C	
8. Benzene	71-43-2
9. Benzophenone Derivatives ^D	
10. Benzotriazoles ^E	
11. Bisphenol A (BPA), F, or S, Tribromo-Bisphenol A, Tetrabromo-Bisphenol A and Epoxy Derivatives ^F	
12. Cellulose Acetate	
13. Chlorinated or Brominated Hydrocarbons	
14. Chlorofluorocarbons (CFC), Hydrogenated Chlorofluorocarbons (HCFC), Hydrofluorocarbon gases (HFC) ^G	
15. Citrates ^H	
16. Colophony (Rosin) ^I	
17. "Conflict Minerals" ^J	
18. Cyanuric Acid	108-80-5
19. Dimethylformamide	68-12-2
20. Dimethylfumarate	624-49-7
21. Dioxins And Furans ^K	
22. Epichlorohydrin	51594-55-9 / 106-89-8
23. Epoxidized Soya Bean Oil (ESBO)	8013-07-8
24. Ethanol	64-17-5
25. Ethylbenzene	100-41-4
26. Ethylene Dibromide (EDB)	106-93-4
27. Ethylenediaminetetracetic acid (EDTA)	60-00-4
28. Flame Retardants, including brominated flame retardants	

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29. Formaldehyde	50-00-0
30. Glycol Ethers ^L (Glymes)	
31. Halogenated Diphenyl Methanes	
32. Halogens (Elemental Fluorine, Chlorine, Bromine or Iodine)	
33. Hexachlorobenzene	118-74-1
34. Isocyanates and Polyurethanes ^M	
35. Isopropylthioxanthone (ITX)	5495-84-1 / 83846-86-0
36. Jatropha Plant Derived Materials	
37. Low Molecular Weight Chlorinated Hydrocarbons ^N	
38. Melamine	108-78-1
39. Mirex ^O	
40. Musk Xylene (5-tert-butyl-2,4,6-trinitro-m-xylene)	81-15-2
41. Nanoparticles ^P	
42. Naphthalene and Methyl Naphthalenes ^Q	
43. Nitrosamines ^R	
44. N-Methylpyrrolidone (NMP)	872-50-4
45. Organotin Compounds ^S	
46. Parabens ^T	
47. Pentachlorophenol	87-86-5
48. Perchlorate Compounds	
49. Polybrominated Compounds ^U	
50. Polychlorinated Compounds - PCB, PCN, PCT ^V	
51. Polycyclic Aromatic Hydrocarbons (PAH) ^W	
52. Polyvinylchloride (PVC), Polyvinylidene Chloride (PVDC) and Vinylchloride Monomer	
53. Quaternary Ammonium Compounds ^X	
54. Radioactive Substances	
55. Rhodamine dyes ^Y	
56. Salicylanilide or halogenated derivatives of salicylanilide ^Z	
57. Semicarbazide and Azodicarbonamide ^{AA}	
58. Short Chained Chlorinated Paraffins ^{BB}	
59. Silicones ^{CC}	
60. Styrene	100-42-5
61. TBA (2,4,6-tribromoanisole)	607-99-8
62. tert-Butyl Hydroquinone (TPHQ)	1948-33-0
63. Thiurams ^{DD}	
64. Titanium Acetyl Acetate (TAA)	17501-79-0
65. Toluene	108-88-3
66. Trichlocarban [3-(4-Chlorophenyl)-1-(3,4-dichlorophenyl) urea	101-20-2
67. Trichloroethylene	79-01-6
68. Triclosan (2,4,4'-Trichloro-T-hydroxydiphenyl Ether)	3380-34-5
69. Tris-Nonylphenol Phosphite (TNPP)	26523-78-4
70. Xylene Isomers (ortho-, meta-, or para-)	



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TPRI does not test each raw material we purchase, nor do we test our polypropylene products for trace amounts of these substances. However, we do exercise good product stewardship practices and seek information concerning the composition of our raw materials from our suppliers. Based on this information, and knowledge of our manufacturing process, we believe that our product does not contain the substances listed above.

These statements do not cover the user:

- modification of our product by any addition of any other product to it,
- modification of our product resulting from processing of the product, or
- inadequate use and/or storage of our material or the finished articles by the end user.



Paul Bradley, Ph.D.
Manager Product Stewardship
Total Petrochemicals & Refining USA, Inc.

Version PP2014.1

Notes

^A Alkyl phenols are defined as: phenol (CAS No. 108-95-2); nonylphenol -technical mixture (CAS No. 25154-52-3); nonylphenol -technical Alkyl phenol ethoxylates are defined as: 4-tert-octylphenol monoethoxylate, [4tOP1EO]; 4-tert-octylphenol diethoxylate [4tOP2EO]; 4-nonylphenol monoethoxylate [4-NP1EO]; and 4-nonylphenol diethoxylate [4NP2EO].

Some TPRI Polypropylenes may contain sterically “hindered” phenols (none of which are included in the list above) at low levels. These phenols are intentionally added as antioxidants to protect the polymer.

^B Biphenyl-4-ylamine (CAS No. 92-67-1); benzidine (CAS No. 92-87-5); 4-chloro-o-toluidine (CAS No. 95-69-2); 2-naphthylamine (CAS No. 91-59-8); o-aminoazotoluene (CAS No. 97-56-3); 5-nitro-o-toluidine (CAS No. 99-55-8); 4-chloroaniline (CAS No. 106-47-8); 4-methoxy-mphenylenediamine (CAS No. 615-05-4); 4,4'-methylenedianiline (CAS No. 101-77-9); 3,3'-dichlorobenzidine (CAS No. 91-94-1); 3,3'-dimethoxybenzidine (CAS No. 119-90-4); 3,3'-dimethylbenzidine (CAS No. 119-93-7); 4,4'-methylenedi-otoluidine (CAS No. 838-88-0); 6-methoxy-m-toluidine (CAS No. 120-71-8); 4,4'-methylene-bis-(2-chloro-aniline) (CAS No. 101-14-4); 4,4'-oxydianiline (CAS No. 101-80-4); 4,4'-thiodianiline (CAS No. 139-65-1); o-toluidine (CAS No. 95-53-4); 4-methyl-mphenylenediamine (CAS No. 95-80-7); 2,4,5-trimethylaniline (CAS No. 137-17-7); o-anisidine (CAS No. 90-04-0); 4-amino azobenzene (CAS No. 60-09-3, and aniline (CAS No. 62-53-3).

^C 4-aminodiphenyl (CAS No. 92-67-1); benzidine (CAS No. 92-87-5); 4-chloro-o-toluidine (CAS No. 95-69-2); 2-naphthylamine (CAS No. 91-59-8); o-aminoazotoluene (CAS No. 97-56-3); 2-amino-4-nitrotoluene (CAS No. 99-55-8); p-chloroaniline (CAS No. 106-47-8); 2,4-diaminoanisole (CAS No. 615-05-4); 4,4'-diaminodiphenylmethane (CAS No. 101-77-9); 3,3'-i-chlorobenzidine (CAS No. 91-94-1); 3,3'-dimethoxybenzidine (CAS No. 119-90-4); 3,3'-dimethylbenzidine (CAS No. 119-93-7); 3,3'-i-methyl-4,4'-diaminodiphenylmethane (CAS No. 838-88-0); p-cresidine (CAS No. 120-71-8); 4,4'-methylene-bis(2-chlororoaniline) (CAS No. 101-14-4); 4,4'-oxydianiline (CAS No. 101-80-4); 4,4'-thiodianiline (CAS No. 139-65-1); o-toluidine (CAS No. 95-53-4); 2,4-toluylenediamine (CAS No. 95-80-7); 2,4,5-trimethylaniline (CAS No. 137-17-7); o-anisidine (CAS No. 90-04-0); and 4-aminoazobenzene (CAS No. 60-09-3)

^D Benzophenone (CAS No. 119-61-9), 2-hydroxybenzophenone (CAS No. 117-99-7), 3-hydroxybenzophenone (CAS No. 13020-57-0), 4-hydroxybenzophenone (CAS No. 1137-42-4), 4-methylbenzophenone (CAS No. 134-84-9)

^E 1,2,3-benzotriazole, also called 1H-Benzotriazole (CAS No. 95-14-7); and 2-(2'-Hydroxy -3',5'- di-tert- butylphenyl) benzotriazole, also called 2-(2H-Benzotriazol-2-yl)-4,6-di-tert-butylphenol (CAS No. 3846-71-7)

^F Bisphenol A (BPA): 4,4'-(1-methylethylidene)bisphenol (CAS No. 80-05-7);

Bisphenol F: 2,2'-methylenebisphenol (CAS No. 2467-02-9);


Bisphenol S (BPS): 4,4'-sulfonylbisphenol, bis (4-hydroxyphenyl)sulfone (CAS No. 80-09-1)

Tribromo-Bisphenol A: Phenol, 2,6-dibromo-4-[1-(3-bromo-4-hydroxyphenyl)-1-methylethyl]- (CAS No. 6386-73-8)

Tetrabromo bisphenol A : 2,2-Bis(3,5-dibromo-4-hydroxyphenyl)propane (CAS No. 79-94-7)

BADGE: 2,2-bis(4-hydroxyphenyl)propane bis(2,3-epoxypropyl)ether (CAS No. 1675-54-3); BADGE derivatives: BADGE.HCl,

BADGE.2HCl, BADGE.HCl.H₂O, BADGE.H₂O and BADGE.2H₂O;

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BFDGE: 2,2'-[methylenebis(p-phenyleneoxymethylene)] bisoxirane (CAS No. 2095-03-6) and 2,2'-[methylenebis(phenyleneoxymethylene)] bisoxirane (CAS No. 39817-09-9); BFDGE derivatives: BFDGE.HCl, BFDGE.2HCl, BFDGE.HCl.H₂O, BFDGE.H₂O, and BFDGE.2H₂O;

NOGE: Phenol, polymer with formaldehyde, glycidyl ether (CAS No. 28064-14-4);

Novolac glycidyl ethers: Formaldehyde, polymer with 2-(chloromethyl)oxirane and phenol (CAS No. 500-006-8)

Because TPRI Polypropylene products, as supplied, are not formulated to contain BADGE, BFDGE, or NOGE, these products are compliant with EC 1895/2005. Please note that EC/1895/2005 repealed EU directive 2002/16/EC and per EC/1895/2005 references to the repealed directive 2002/16/EC shall be construed as references to EC/1895/2005.

^G CFCs are defined as: trichlorofluoromethane, dichlorodifluoromethane, chlorotrifluoromethane, chlorodifluoromethane, dichlorofluoromethane, chlorofluoromethane, bromochlorodifluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,1-trichloro-2,2,2-trifluoroethane, 1,2-dichloro-1,1,2,2-tetrafluoroethane, 1-chloro-1,1,2,2-pentafluoroethane, 2-chloro-1,1,1,2-tetrafluoroethane, 1,1-dichloro-1-fluoroethane, 1-chloro-1,1-difluoroethane, tetrachloro-1,2-difluoroethane, tetrachloro-1,1-difluoroethane, 1,1,2-trichlorotrifluoroethane, 1-bromo-2-chloro-1,1,2-trifluoroethane, 2-bromo-2-chloro-1,1,1-trifluoroethane, 1,1-dichloro-2,2,3,3,3-pentafluoropropane, and 1,3-dichloro-1,2,2,3,3-pentafluoropropane

HFCs are defined as: trichlorofluoromethane, dichlorodifluoromethane, chlorotrifluoromethane, chlorodifluoromethane, dichlorofluoromethane, chlorofluoromethane, bromochlorodifluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,1-trichloro-2,2,2-trifluoroethane, 1,2-dichloro-1,1,2,2-tetrafluoroethane, 1-chloro-1,1,2,2-pentafluoroethane, 2-chloro-1,1,1,2-tetrafluoroethane, 1,1-dichloro-1-fluoroethane, 1-chloro-1,1-difluoroethane, tetrachloro-1,2-difluoroethane, tetrachloro-1,1-difluoroethane, 1,1,2-trichlorotrifluoroethane, 1-bromo-2-chloro-1,1,2-trifluoroethane, 2-bromo-2-chloro-1,1,1-trifluoroethane, 1,1-dichloro-2,2,3,3,3-pentafluoropropane, and 1,3-dichloro-1,2,2,3,3-pentafluoropropane

Hydrofluorocarbon (HFC) gases are substances composed strictly of carbon, hydrogen and fluorine, which are gases at room temperature and pressure. They are used primarily as refrigerants, replacing chlorofluorocarbons, because they have little potential to destroy the ozone layer. By HFCs we specifically mean the following substances: Trifluoromethane (CAS No. 75-46-7); Difluoromethane (CAS No. 75-10-5); Fluoromethane (CAS No. 593-53-3); Pentane, 1,1,1,2,2,3,4,5,5,5-decafluoro (CAS No. 138495-42-8); 1,1,1,2,2-Pentafluoroethane (CAS No. 354-33-6); Difluoroethane (CAS No. 75-37-6); 1,1,2-Trifluoroethane (CAS No. 430-66-0); 1,1,1-Trifluoroethane (CAS No. 420-46-2); 1,1,1,2,3,3,3-Heptafluoropropane (CAS No. 431-89-0); 1,1,1,2,2,3-Hexafluoropropane (CAS No. 677-56-5); 1,1,1,2,3,3-Hexafluoropropane (CAS No. 431-63-0); 1,1,1,3,3,3-Hexafluoropropane (CAS No. 690-39-1); 1,1,2,2,3-Pentafluoropropane (CAS No. 507-55-1); 1,1,1,3,3-Pentafluoropropane (CAS No. 460-73-1); 1,1,1,3,3-Pentafluorobutane (CAS No. 406-58-6).

^H Including triethyl citrate (CAS RN 77-93-0), acetyltriethyl citrate (CAS RN 77-89-4), tributyl citrate (CAS RN 77-94-1), or acetyltributyl citrate (CAS RN 77-90-7).

^I Colophony, also called rosin, is a solid material at room temperature obtained from the distillation of turpentine oil from the oleoresin of pines and some other trees, mostly conifers. The primary constituents are resin acids of the abietic and pimaric types, having the general formula C₁₉H₂₉COOH and a phenanthrene nucleus.

^J Tin, Tungsten, Tantalum, or Gold or compounds of these metals, and Columbite-tantalite (coltan), Cassiterite, Wolframite, or their derivatives. Coltan is the industrial name for columbite-tantalite, a dull black metallic mineral from which the elements niobium (formerly "columbium") and tantalum are extracted. Wolframite is an iron-manganese-tungstate mineral. Cassiterite is a tin oxide mineral.

^K Including but not limited to the following substances: 2,3,7,8-Tetrachlorodibenzo-p-dioxin (CAS No. 1746-01-6); 1,2,3,7,8,9-hexachlorodibenzo-p-dioxin (CAS No. 19408-74-3); 1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin (CAS No. 3268-87-9); 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin (CAS No. 35822-46-9); 1,2,3,4,6,7,8,9-octachlorodibenzofuran (CAS No. 39001-02-0); 1,2,3,4,7,8-hexachlorodibenzo-p-dioxin (CAS No. 39227-28-6); 1,2,3,7,8-pentachlorodibenzo-p-dioxin (CAS No. 40321-76-4); 2,3,7,8-tetrachlorodibenzofuran (CAS No. 51207-31-9); 1,2,3,4,7,8,9-heptachlorodibenzofuran (CAS No. 55673-89-7); 2,3,4,7,8-pentachlorodibenzofuran (CAS No. 57117-31-4); 1,2,3,7,8-pentachlorodibenzofuran (CAS No. 57117-41-6); 1,2,3,6,7,8-hexachlorodibenzofuran (CAS No. 57117-44-9); 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin (CAS No. 57653-85-7); 2,3,4,6,7,8-hexachlorodibenzofuran (CAS No. 60851-34-5); 1,2,3,4,6,7,8-heptachlorodibenzofuran (CAS No. 67562-39-4); 1,2,3,4,7,8-hexachlorodibenzofuran (CAS No. 70648-26-9); 1,2,3,7,8,9-hexachlorodibenzofuran (CAS No. 72918-21-9); 2,3,7,8-Tetrabromodibenzo[b,e][1,4]dioxin (CAS No. 50585-41-6); 1,2,3,7,8-Pentabromodibenzo[b,e][1,4]dioxin (CAS No. 109333-34-8); 2,3,7,8-Tetrabromodibenzofuran (CAS No. 67733-57-7); 2,3,4,7,8-Pentabromodibenzofuran (CAS No. 131166-92-2); 1,2,3,4,7,8-Hexabromodibenzo[b,e][1,4]dioxin (CAS No. 110999-44-5); 1,2,3,7,8,9-Hexabromodibenzo[b,e][1,4]dioxin (CAS No. 110999-46-7); 1,2,3,6,7,8-Hexabromo-dibenzo[b,e][1,4]dioxin (CAS No. 110999-45-6); and 1,2,3,7,8-Pentabromodibenzo[b,e][1,4]dioxin (CAS No. 109333-34-8)

^L Ethylene glycol methyl ether - EGME (CAS No. 109-86-4); Ethylene glycol methyl ether acetate - EGMEA (CAS No. 110-49-6); Ethylene glycol ethyl ether - EGEE (CAS No. 110-80-5); Ethylene glycol ethyl ether acetate - EGEEA (CAS No. 111-15-9); Triethylene glycol



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dimethyl ether - TEGDME (CAS No. 112-49-2); Ethylene glycol dimethyl ether, - EGDME (CAS No. 110-71-4); 1-Propylene glycol 2-methyl ether - 1PG2ME (CAS No. 1589-47-5); 1-Propylene glycol 2-methyl ether acetate - 1PG2MEA (CAS No. 70657-70-4); Diethylene glycol methyl ether - DEGME (CAS No. 111-77-3); Diethylene glycol dimethyl ether - DEGDM (CAS No. 111-96-6); Ethylene glycol monobutyl ether (CAS No. 111-76-2); Ethane, 1,1'-oxybis[2-ethoxy- (CAS No. 112-36-7) also called Ethyldiglyme or Diethylene glycol diethyl ether; Butane, 1,1'-[oxybis(2,1-ethanedioxy)]bis (CAS No. 112-73-2) also called Butyldiglyme or Diethylene glycol dibutyl ether; 5, 8, 11, 14, 17-Pentaoxaheneicosane (CAS No. 112-98-1) also called Tetraethylene glycol dibutyl ether; 2, 5, 8, 11, 14-Pentaoxapentadecane (CAS No. 143-24-8) also called Tetraglyme or Tetraethylene glycol dimethyl ether; Ethane, 1,2-diethoxy- (CAS No. 629-14-1) also called Ethylglyme or Ethylene glycol diethyl ether; 3, 6, 9, 12, 15-Pentaoxaheptadecane (CAS No. 4353-28-0) also called Tetraethylene glycol diethyl ether; 3, 6, 9, 12, 15,18-Hexaoxaeicosane (CAS No. 23601-39-0) also called Pentaethylene glycol diethyl ether; Poly(oxy-1,2-ethanediyl), .alpha.-methyl-.omega.-methoxy- (CAS No. 24991-55-7) also called Polyglyme or Polyethylene glycol dimethyl ether; Poly(oxy-1,2-ethanediyl), .alpha.-butyl-.omega.-butoxy- (CAS No. 31885-97-9) also called Polyethylene glycol dibutylether; 5, 8, 11, 14, 17, 20-Hexaoxatetracosane (CAS No. 51105-00-1) also called Pentaethylene glycol dibutyl ether; and 5, 8, 11, 14-Tetraoxaoctadecane (CAS No. 63512-36-7) also called Butyltriglyme or Triethylene glycol dibutyl ether.

The above list includes glymes listed in the EPA's 2011 proposed SNUR for Glymes (EPA-HQ-OPPT-2009-0767; FRL-8877-8] RIN 2070-AJ52).

- ^M An isocyanate is a chemical substance, which contains the functional group of atoms: $-N=C=O$. Isocyanates along with polyols (alcohols with multiple hydroxyl groups) are used to manufacture polyurethanes. Many different isocyanates exist. Commonly used isocyanates include methyl isocyanate (CAS No. 624-83-9), isophorone diisocyanate (CAS No. 4098-71-9), 2,4-toluene diisocyanate (TDI) (CAS No. 584-84-9), hexamethylene diisocyanate (CAS No. 822-06-0), methylene-di-p-phenylene isocyanate (MDI) (CAS No. 101-68-8), hexamethylene diisocyanate (CAS No. 822-06-0) and M-tolydene diisocyanate, also called toluene diisocyanate -mixed isomers (CAS No. 26471-62-5).
- ^N Defined as: Tetrachloromethane (CAS No. 56-23-5), 1,1,2,2- tetrachloroethane (CAS No. 79-34-5), 1,1,1,2-tetrachloroethane (CAS No.: 630-20-6), pentachloroethane (CAS No. 76-01-7), trichloromethane (chloroform; CAS No. 67-66-3), 1,1,2- trichloroethane (CAS No. 79-00-5), 1,1-dichloroethylene (CAS No. 75-35-4), 1,1,1-trichloroethane (CAS No. 71-55-6), trichloromethane also called chloroform (CAS No. 67-66-3), methylene dichloride also called dichloromethane (CAS No. 75-09-2)
- ^O 1,1a,2,2,3,3a,4,5,5,5a,5b,6-dodecachlorooctahydro-1H-1,3,4-(methanetriyl)cyclobuta[cd]pentalene (CAS No. 2385-85-5)
- ^P Nanoparticles are materials whose size is on a scale of approximately $1 - 100 \text{ nm}$ (10^{-9} m) in any dimension.
- ^Q Naphthalene (CAS No. 91-20-3); methylnaphthalene (CAS No. 1321-94-4); 1-methylnaphthalene (CAS No. 90-12-0); and 2-methylnaphthalene (CAS No. 91-57-6)
- ^R Nitrosamines are chemical compounds which contain the chemical structure $R^1N(R^2)N=O$, where R^1 and R^2 are alkyl or aromatic organic groups. Nitrosamines may be formed by reaction between an amine and nitrogen oxides or nitrites. Common nitrosamines included: N-Nitrosodi-n-butylamine (CAS No. 924-16-3), N-Nitrosoethylphenylamine (CAS No. 612-64-6), N-Nitrosomethylethylamine (CAS No. 10595-95-6), N-Nitrosomethylphenylamine (CAS No. 614-00-6), N-Nitrosomorpholine (CAS No. 59-89-2), N-Nitrosomopiperidine (CAS No. 100-75-4), N-Nitrosodiethanolamine (CAS No. 1116-54-7), N-Nitrosodi-l-propylamine (CAS No. 601-77-4), N-Nitrosopyrrolidine (CAS No. 930-55-2), N-Nitrosodimethylamine (CAS No. 62-75-9), N-Nitrosodi-n-propylamine (CAS No. 621-64-7), N-Nitrosornicotine (CAS No. 16543-55-8), 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (CAS No. 64091-91-4), N-Nitrosodiethylamine (CAS No. 55-18-5), 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanol (CAS No. 76014-81-8), N-Nitrosoanatabine (CAS No. 71267-22-6), N-nitrosodiisononylamine, and N-nitrosodibenzylamine .
- ^S Including but not limited to Monobutyltin Cation (MBT), Dibutyltin Cation (DBT), Dioctyl Tin (DOT), Tributyltin Cation (TBT), Triphenyltin Cation (TPT) and Tributyltin Oxide (TBTO)
- ^T Parabens are esters of para-hydroxybenzoic acid. Common parabens include methylparaben (E number E218), ethylparaben (E214), propylparaben (E216), butylparaben and heptylparaben (E209). Less common parabens include isobutylparaben, isopropylparaben, benzylparaben and their sodium salts.
- ^U Including, but not limited to: Pentabromodiphenyl ether (Penta BDE); Octabromodiphenyl ether (Octa BDE); Deca Brominated Diphenyl Ether (DecaBDE); Polybrominated Diphenyl Ethers (PBDE); Polybrominated Biphenyls (PBB); Polybrominated Biphenyl Ethers (PBBE); Polybrominated Biphenyl Oxides (PBBO)
- ^V Polychlorinated Biphenyls (PCB); Polychlorinated Naphthalenes (PCN); and Polychlorinated Terphenyls (PCT)
- ^W Acenaphthene (CAS No. 83-32-9); Acenaphthylene (CAS No. 208-96-8); Anthracene (CAS No. 120-12-7); Benz[a]anthracene (CAS No. 56-55-3); Benzo[a]pyrene (CAS No. 50-32-8); Benzo[b]fluoranthene (CAS No. 205-99-2); Benzo[e]pyrene (CAS No. 192-97-2); Benzo[g,h,i]perylene (CAS No. 191-24-2); Benzo[j]fluoranthene (CAS No. 205-82-3); Benzo[k]fluoranthene (CAS No. 207-08-9); Chrysene (CAS No. 218-01-9); Dibenz[a,h]anthracene (CAS No. 53-70-3); Fluoranthene (CAS No. 206-44-0); Fluorene (CAS No. 86-73-7); Indeno[1,2,3-c,d]pyrene (CAS No. 193-39-5); Naphthalene (CAS No. 91-20-3); Phenanthrene (CAS No. 85-01-8); and Pyrene (CAS No. 129-00-0)


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Polypropylene

All Polypropylene Products

- ^X Quaternary ammonium compounds are ammonium salts in which organic groups have been substituted for all four hydrogens of the original ammonium cation. The organic groups may be aliphatic, or aromatic in nature, and the nitrogen can be part of a ring system. These types of compounds are typically used as disinfectants. Commonly used quaternary ammonium compounds include, but are not limited to: Quaternium-15 or 1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride (CAS Number: 4080-31-3); DiHEMDA or di(2-hydroxyethyl) methyl dodecyl ammonium; Benzalkonium Chloride (CAS RN: 8001-54-5); Benzethonium Chloride (CAS RN: 121-54-0); Cetalkonium Chloride (CAS RN: 122-18-9); Laurtrimonium Bromide (CAS RN: 1119-94-4); Myristyltrimethylammonium bromide (CAS RN: 1119-97-7); Cetrimide (CAS RN: 8044-71-1); Cetrimonium Bromide (CAS RN: 57-09-0); Cetylpyridinium Chloride (CAS RN: 123-03-5); Stearalkonium Chloride (CAS RN: 122-19-0); Octyl decyl dimethyl ammonium chloride (CAS RN 32426-11-2); Dioctyl dimethyl ammonium chloride (CAS RN 5538-94-3); Didecyl dimethyl ammonium chloride (CAS RN 7173-51-5); Alkyl (60%C14, 30%C16, 5%C18, 5%C12) dimethyl benzyl ammonium chloride (CAS RN 53516-76-0); Alkyl (68%C12, 32%C14) dimethylethylbenzyl ammonium chloride (CAS RN 85409-23-0); and Alkyl (50%C14, 40%C12, 10%C16) dimethylbenzyl ammonium chloride (EPA PC Code 069143).
- ^Y Including but not limited to Rhodamine B, Rhodamine 6G, and Rhodamine 123.
- ^Z Salicylanilide also known as 2-Hydroxy-N-phenylbenzamide or 2-Hydroxybenzanilide (CAS No. 87-17-2). Known halogenated derivatives include: tribromsalan (TBS, 3,4',5-tribromosalicylanilide – CAS No. 24556-65-8), dibromsalan (DBS, 4', 5-dibromosalicylanilide – CAS No. 24556-64-7), metabromsalan (MBS, 3, 5-dibromosalicylanilide – CAS No. 2577-72-2), and 3,3', 4,5'-tetrachlorosalicylanilide (TC-SA – CAS No. 1154-59-2).
- ^{AA} Semicarbazide CAS No. 57-56-7
Azodicarbonamide CAS No. 123-77-3
- ^{BB} Defined as: Alkanes, C10-13, chloro (CAS No. 85535-84-8).
- ^{CC} Silicones are more precisely called polymerized siloxanes or polysiloxanes. Silicones are mixed inorganic-organic polymers with the chemical formula $[R_2SiO]_n$, where R = organic groups such as methyl, ethyl, and phenyl. These materials consist of an inorganic silicon-oxygen backbone (...-Si-O-Si-O-Si-O-...) with organic side groups attached to the silicon atoms, which are four-coordinate. This product may contain trace amounts of silanes, which strictly speaking are not silicones, but are chemically similar to silicones.
- ^{DD} Thiurams are sulfur and nitrogen containing compounds, which are typically used as vulcanization agents in rubber. They have other uses as well, but these substances are not typically used in polypropylene. Thiurame is the French name for Thiuram. These include: **Carba Mix:** Diphenylguanidine (CAS No. 102-06-7), Zinc dibutyldithiocarbamate (CAS No. 136-23-2), Zinc diethyldithiocarbamate (CAS No. 14324-55-1); **Black Rubber Mix:** N-isopropyl-N'-phenyl p-phenylenediamine (CAS No. 101-72-4), N-cyclohexyl-N'-phenyl p-phenylenediamine (CAS No. 101-87-1), N, N'-Diphenyl p-phenylenediamine (CAS No. 74-31-7); **Mercapto Mix:** N-Cyclohexylbenzothiazyl-sulfenamide (CAS No. 95-33-0), Dibenzothiazyl disulfide (CAS No. 120-78-5), Morpholinylmercaptobenzothiazole (CAS No. 95-32-9); **Thiuram Mix:** Tetramethylthiuram monosulfide (CAS No. 97-74-5), Disulfiram (CAS No. 97-77-8), Tetramethylthiuram disulfide (CAS No. 137-26-8), Dipentamethylthiuram disulfide (CAS No. 94-37-1);

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