

Material Category "List" means limited to the listing, "Examples" means non-exhaustive	CAS Number	Prohibition Type (Banned / Disclosed)	Threshold for Disclosure (based on Item's total weight, unless otherwise noted)	Industry Uses	Reason for Inclusion
<b>Level A Materials - Prohibited and Restricted Substances</b>					
<b>A1 - Asbestos/Asbestos Materials</b>	various	Product General ban	Intentionally added or 100 ppm (total)	Not expected, but historically used in heat resistant materials, gaskets, insulator, filler, abrasives, talc	EU - REACH Regulation and amendments; US - Toxic Substances Control Act (restricts new uses); Occupational Safety and Health Act (29CFR 1910.1001-1051). Japan - Labor Safety and Hygiene Law (Article 55).
List of substances	CAS Number				
Asbestos and Asbestos Materials	1332-21-4				
Actinolite	77536-66-4				
Amosite (Grunerite)	12172-73-5				
Antophyllite	77536-67-5				
Chrysotile	12001-29-5				
Crocidolite	12001-28-4				
Tremolite	77536-68-6				
<b>A2 - Certain Azo-based Materials (applies only to azocolourants and azodyes which, by reductive cleavage of one or more azo groups, may release one or more of the 22 aromatic amines listed below)</b>	various	<b>Restricted applications:</b> applicable only to Items that may come into direct contact with human skin	30 ppm (for direct skin contact)	Dyes, plastic colorants, headsets	EU - REACH Regulation and amendments; Germany - Consumer Good Ordinance, ChemG Japan - Law Concerning Examination and Regulation of Manufacture and Handling of Chemical Substances, Labor Safety and Hygiene Law.
List of 22 aromatic amines	CAS Number				
4-Aminodiphenyl and its salts	92-67-1				
Benzidine and its salts	92-87-5				
4-Chloro-o-toluidine (4-chloro-2-methylaniline)	95-69-2				
2-Naphthylamine	91-59-8				
o-Aminoazotoluene	97-56-3				
2-Amino-4-nitrotoluene	99-55-8				
p-Chloroaniline	106-47-8				
2,4-Diaminoanisole	615-05-4				
4,4'-Diaminodiphenylmethane	101-77-9				
3,3'-Dichlorobenzidine	91-94-1				
3,3'-Dimethoxybenzidine	119-90-4				
3,3'-Dimethylbenzidine	119-93-7				
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0				
p-Cresidine (5-Methyl-o-Anisidine)	120-71-8				
4,4'-Methelenebis-(2-chloroaniline)	101-14-4				
4,4'-Oxydianiline	101-80-4				
4,4'-thiodianiline and its salts	139-65-1				
o-Toluidine	95-53-4				
2,4-Toluylenediamine (Toluene-2,4-diamine)	95-80-7				
2,4,5-Trimethylaniline	137-17-7				
o-anisidine	90-04-0				
4-amino azobenzene	60-09-3				

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<b>A3 - Cadmium and Cadmium compounds</b>	various	<b>Restricted applications:</b> 1. Dyes, Pigments, paints / enamels 2. Stabilizers pigments, dyes in plastics (insulation in electrical wiring, tubing, fittings) 3. Surface treatment (plating, coating) 4. Batteries	Intentionally added, or 100 ppm (homogeneous material basis), or 20 ppm for batteries	surface finish on circuit boards, silver cadmium oxide electrical contact alloys for relays and switches, cadmium telluride photovoltaic cells, cadmium sulfide based photocells, photocells, surface coating/plating, stabilizer for PVC	EU - REACH Regulation 1907/2006 and amendments; EU - Restrictions in Austria, Switzerland, Denmark, Netherlands, and Sweden; Global Battery Regulations: Minamata, US, EU, Asia Pacific, etc. Global RoHS Regulations: EU, China, etc.
Examples only	CAS Number				
Cadmium	7440-43-9				
Cadmium chloride	10108-64-2				
Cadmium fluoroborate	14486-19-2				
Cadmium oxide	1306-19-0				
Cadmium iodide	7790-80-9				
Cadmium selenide	1306-24-7				
Cadmium telluride	1306-25-8				
Cadmium tungstate	7790-85-4				
Cadmium nitrate (Cadmium salt)	10325-94-7				
Cadmium sulfate (Sulfuric acid)	10124-36-4				
Cadmium sulfide	1306-23-6				
Other cadmium compounds	various				
<b>A4 - Chromium (VI) and Chromium (VI) compounds</b>	various	<b>Restricted applications:</b> 1. Pigment, dyes used in plastics and rubber 2. Dyes, inks, catalyst	Intentionally added, or 1000 ppm (homogeneous material basis)	Anti-corrosion surface treatment, surface plating, aluminum anodizing, chromate conversion, pigments, inks, paints adhesion enhancements, anti-corrosion in water treatment	EU - REACH Regulation and amendments; Global RoHS Regulations: EU, China, etc.
Examples	CAS Number				
Barium chromate (VI)	10294-40-3				
Calcium chromate (VI)	13765-19-0				
Chromium trioxide (VI)	1333-82-0				
Lead chromate (VI)	7758-97-6				
Lead chromate (VI) oxide	18454-12-1				
Sodium chromate (VI)	7775-11-3				
Sodium dichromate (VI)	10588-01-9				
Strontium chromate (VI)	7789-06-2				
Zinc chromate (VI)	13530-65-9				
Potassium dichromate (VI)	7778-50-9				
Other hexavalent chromium compounds	various				

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<b>A5 - Lead and Lead compounds</b>	various	<b>Restricted applications:</b> 1. Pigment, dyes used in plastics and rubber (cables, cords, wires etc.) 2. Dyes, inks, catalyst 3. Sealed lead batteries	Intentionally added, or 1000 ppm for metals, or 300 ppm for cables, cord & wires (homogeneous material basis)	Electrical interconnect (surface finish, solder, leads). Lead glass (CRT, lenses). Plastic stabilizer. Molding agent in plastic manufacture. Counterweight, machined metal parts (transformers). PVC electrical cables	EU - REACH Regulation and amendments; Global Battery Regulations: Minamata, US, EU, Asia Pacific etc. Global RoHS Regulations: EU, China, etc. US - California Prop 65 settlement
<b>Examples</b>	<b>CAS Number</b>				
Lead	7439-92-1				
Lead sulfate	7446-14-2				
Lead carbonate	598-63-0				
Lead hydrocarbonate	1319-46-6				
Lead acetate	301-04-2				
Lead (II) acetate, trihydrate	6080-56-4				
Lead phosphate	7446-27-7				
Lead selenide	12069-00-0				
Lead acetate	6080-56-4				
Lead nitrate	10099-74-8				
Other lead compounds	various				
<b>A6 - Mercury and Mercury compounds</b>	various	<b>Restricted applications:</b> 1. Pigment, dyes and additives used in plastics and rubber 2. Dyes, paints, inks 3. Batteries 4. Relay, switches, sensors	Intentionally added, or 1000 ppm (homogeneous materials basis), or 5 ppm for relays, switches and sensors	Lamps (back light for LCD, high intensity discharge lamps), thermostats, pigments, paints, battery, alloys, steels, resin stabilizer, ferroelectric	EU - REACH Regulation and amendments; Sweden - KIFS 1998:944 Global Battery Regulations: Minamata, US, EU, Asia Pacific Global RoHS Regulations: EU, China, etc.
<b>Examples</b>	<b>CAS Number</b>				
Mercury	7439-97-6				
Mercuric chloride	33631-63-9				
Mercuric bichloride	7487-94-7				
Mercuric sulfate	7783-35-9				
Mercuric nitrate	10045-94-0				
Mercuric oxide	21908-53-2				
Mercuric sulfide	1344-48-5				
Other mercury compounds	various				

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<b>A7 - Class I &amp; Class II Ozone Depleting Substances/Isomers (ODS)</b>	various	Product and Process General ban	Intentionally added	Not expected due to industry phase-out, but may be found in rare cleaning applications. ODS are used as refrigerants, foaming agents, extinguishing agents, cleaning solvents.	EU - Ozone Depleting Substances Germany - FCKW - Halon Verbots and CFC/Halon Prohibition Ordinance US - Clean Air Act Title VI (40CFR Part 82.106); Japan - Law Concerning Protection of the Ozone Layer by Regulating Designated Substances Note: Class I Substances currently banned for import and manufacture. Users must comply with labeling requirements. Note: Class II Substances banned for import and manufacture
<b>List of Class I ODS</b>	<b>CAS Number</b>				
Trichlorotrifluoromethane (CFC-11)	75-69-4				
Dichlorodifluoromethane (CFC-12)	75-71-8				
Chlorotrifluoromethane (CFC-13)	75-72-9				
Pentachlorofluoroethane (CFC-111)	354-56-3				
Tetrachlorodifluoroethane (CFC-112)	76-12-0				
Trichlorotrifluoroethane (CFC-113)	354-58-5				
1,1,2 Trichlorotrifluoroethane	76-13-1				
Dichlorotetrafluoroethane (CFC-114)	76-14-2				
Monochloropentafluoroethane (CFC-115)	76-15-3				
Heptachlorofluoropropane (CFC-211)	422-78-6; 135401-87-5				
Hexachlorodifluoropropane (CFC-212)	3182-26-1				
Pentachlorotrifluoropropane (CFC-213)	134237-31-3				
Tetrachlorotetrafluoropropane (CFC-214)	29255-31-0				
1,1,1,3-Tetrachlorotetrafluoropropane	2268-46-4				
Trichloropentafluoropropane (CFC-215)	1599-41-3				
1,1,1-Trichloropentafluoropropane	4259-43-2				
1,2,3-Trichloropentafluoropropane	76-17-5				
Dichlorohexafluoropropane (CFC-216)	661-97-2				
Monochloroheptafluoropropane (CFC-217)	422-86-6				
Bromochlorodifluoromethane (Halon 1211)	353-59-3				
Bromotrifluoromethane (Halon 1301)	75-63-8				
Dibromotetrafluoroethane (Halon 2402)	124-73-2				
Carbon Tetrachloride (Tetrachloromethane)	56-23-5				
1,1,1-Trichloroethane (Methyl Chloroform) and its isomers except 1,1,2-TCA	71-55-6				
Bromomethane (Methyl Bromide)	74-83-9				
Bromodifluoromethane (HBFC-22B1) and isomers (HBFCs)	1511-62-2				
Chlorobromomethane (CBM)	74-97-5				
<b>List of Class II ODS</b>	<b>CAS Number</b>				
Dichlorofluoromethane (HCFC-21)	75-43-4				
Chlorodifluoromethane (HCFC-22)	75-45-6				
Chlorofluoromethane (HCFC-31)	593-70-4				

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Tetrachlorofluoroethane (HCFC-121) 1,1,1,2-tetrachloro-2-fluoroethane (HCFC-121a) 1,1,2,2-tetrachloro-1-fluoroethane	134237-32-4, 130879-71-9 354-11-0 354-14-3				
Trichlorodifluoroethane (HCFC-122) 1,2,2-trichloro-1,1-difluoroethane	41834-16-6 354-21-2				
Dichlorotrifluoroethane (HCFC-123) Dichloro-1,1,2-trifluoroethane 2,2-dichloro-1,1,1-trifluoroethane 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a) 1,1-dichloro-1,2,2-trifluoroethane (HCFC-123b) 2,2-dichloro-1,1,2-trifluoroethane (HCFC-123b)	34077-87-7 90454-18-5 306-83-2 354-23-4 812-04-4 812-04-4				
Chlorotetrafluoroethane (HCFC-124) 2-chloro-1,1,1,2-tetrafluoroethane 1-chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	63938-10-3 2837-89-0 354-25-6				
Trichlorofluoroethane (HCFC-131) 1-fluoro-1,2,2-trichloroethane 1,1,1-trichloro-2-fluoroethane (HCFC-131b)	27154-33-2; (134237-34-6) 359-28-4 811-95-0				
Dichlorodifluoroethane (HCFC-132) 1,2-dichloro-1,1-difluoroethane (HCFC-132b) 1,1-dichloro-1,2-difluoroethane (HCFC-132c) 1,1-dichloro-2,2-difluoroethane 1,2-dichloro-1,2-difluoroethane	25915-78-0 1649-08-7 1842-05-3 471-43-2 431-06-1				
Chlorotrifluoroethane (HCFC-133) 1-chloro-1,2,2-trifluoroethane 2-chloro-1,1,1-trifluoroethane (HCFC-133a)	1330-45-6 1330-45-6 75-88-7				
Dichlorofluoroethane (HCFC-141) 1,1-dichloro-1-fluoroethane (HCFC-141b) 1,2-dichloro-1-fluoroethane	1717-00-6; (25167-88-8) 1717-00-6 430-57-9				
Chlorodifluoroethane (HCFC-142) 1-chloro-1,1-difluoroethane (HCFC-142b) 1-chloro-1,2-difluoroethane (HCFC-142a)	25497-29-4 75-68-3 25497-29-4				
Hexachlorofluoropropane (HCFC-221)	134237-35-7				
Pentachlorodifluoropropane (HCFC-222)	134237-36-8				
Tetrachlorotrifluoropropane (HCFC-223)	134237-37-9				
Trichlorotetrafluoropropane (HCFC-224)	134237-38-0				

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Dichloropentafluoropropane, (Ethyne, fluoro-) (HCFC-225) 2,2-dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa) 2,3-dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba) 1,2-dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb) 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca) 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb) 1,1-dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc) 1,2-dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da) 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225ea) 1,1-dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	127564-92-5; (2713-09-9) 128903-21-9 422-48-0 422-44-6 422-56-0 507-55-1 13474-88-9 431-86-7 136013-79-1 111512-56-2				
Chlorohexafluoropropane (HCFC-226)	134308-72-8				
Pentachlorofluoropropane (HCFC-231)	134190-48-0				
Tetrachlorodifluoropropane (HCFC-232)	134237-39-1				
Trichlorotrifluoropropane (HCFC-233) 1,1,1-Trichloro-3,3,3-trifluoropropane	134237-40-4 7125-83-9				
Dichlorotetrafluoropropane (HCFC-234)	127564-83-4				
Chloropentafluoropropane (HCFC-235) 1-Chloro-1,1,3,3,3-pentafluoropropane	134237-41-5 460-92-4				
Tetrachlorofluoropropane (HCFC-241)	134190-49-1				
Trichlorodifluoropropane (HCFC-242)	134237-42-6				
Dichlorotrifluoropropane (HCFC-243) 1,1-dichloro-1,2,2-trifluoropropane 2,3-dichloro-1,1,1-trifluoropropane 3,3-dichloro-1,1,1-trifluoropropane	134237-43-7 7125-99-7 338-75-0 460-69-5				
Chlorotetrafluoropropane (HCFC-244) 3-chloro-1,1,2,2-tetrafluoropropane	134190-50-4 679-85-6				
Trichlorofluoropropane (HCFC-251) 1,1,3-trichloro-1-fluoropropane	134190-51-5 818-99-5				
Dichlorodifluoropropane (HCFC-252)	134190-52-6				
Chlorotrifluoropropane (HCFC-253)	134237-44-8				
Dichlorofluoropropane (HCFC-261) 1,1-dichloro-1-fluoropropane	134237-45-9 7799-56-6				
Chlorodifluoropropane (HCFC-262) 2-chloro-1,3-difluoropropane	134190-53-7 102738-79-4				
Chlorofluoropropane (HCFC-271) 2-chloro-2-fluoropropane	134190-54-8 420-44-0				
<b>A8 - Polybrominated Biphenyls (PBBs)</b>	various	Product General ban	Intentionally added or 1000 ppm (homogeneous material basis)	Not expected but were used as flame retardants additives. Could present in insulation oil, lubricating oil, electrolytic solution	EU - REACH Regulation and amendments; Germany - Dioxin Ordinance Global RoHS Regulations: EU, China, etc.
<u>Examples</u>	<u>CAS Number</u>				

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Polybrominated Biphenyls (PBBs)	59536-65-1; 37317-41-2; 27858-07-7				
Bromobiphenyls	2052-07-5 (2- Bromobiphenyl) 2113-57-7 (3- Bromobiphenyl) 92-66-0 (4- Bromobiphenyl)				
Dibromobiphenyl	92-86-4				
Tribromobiphenyl	59080-34-1				
Tetrabrominatedbiphenyl	40088-45-7				
Pentabrominatedbiphenyl	56307-79-0				
Hexabromobiphenyls	59080-40-9 36355-01-8 (hexabromo- 1,1'-biphenyl) 67774-32-7 (Firemaster FF-1)				
Heptabromobiphenyl	35194-78-6				
Octabromobiphenyl	61288-13-9				
Nonabromobiphenyl	27753-52-2				
<b>A9 - Polybrominated Biphenyls Ethers (PBDEs)</b>	various	Product General ban	Intentionally added or 1000 ppm (homogeneous materials basis)	Not expected. Some PBBOs (PeBDPO) were previously used as a flame retardant. . OBDPO may be used in ABS and other thermoplastics. DBDPO may be used in HIPS and other thermoplastics. . PeBDPO is currently used almost exclusively to enhance the ignition resistance of flexible polyurethane foams.	EU - REACH Regulation and amendments; Germany - Dioxin Ordinance EU - RoHS
<u>Examples</u>	<u>CAS Number</u>				
Bromodiphenyl ether	101-55-3				
Dibromodiphenyl ether	2050-47-7				
Tribromodiphenyl ether	49690-94-0				
Tetrabromodiphenyl ether	40088-47-9				
Pentabromodiphenyl ether (PeBDPO)(note: commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxides)	32534-81-9 (CAS number used for commercial grade PeBDPO)				
Hexabromodiphenyl ether	36483-60-0				

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Heptabromodiphenyl ether	68928-80-3				
Octabromodiphenyl ether (OBDPO)	32536-52-0				
Nonabromodiphenyl ether	63936-56-1				
Decabromodiphenyl ether	1163-19-5				
<b>A10 - Polychlorinated Biphenyls(PCBs) / Polychlorinated Terphenyls (PCTs)</b>	various	Product General ban	Intentionally added or 50 ppm (total)	Not expected, but historically used in transformers, capacitors. Insulation oil, lubricating oil, electrical insulation medium.	EU - REACH Regulation and amendments; US - TSCA (40 CFR Part 761) Japan - Law Concerning Examination and Regulation of Manufacture and Handling of Chemical Substances.
Examples	CAS Number				
Polychlorinated Biphenyls	1336-36-3				
Aroclor	12767-79-2				
Chlorodiphenyl (Aroclor 1260)	11096-82-5				
Kanechlor 500	27323-18-8				
Aroclor 1254	11097-69-1				
Terphenyls	26140-60-3, 61788-33-8				
Other PCBs and PCTs	various				
<b>A11 - Polychlorinated Naphthalenes (PCNs) with 3 or more chlorine atoms.</b>	various	Product General ban	Intentionally added	Historically used as an additive lubricants, rubbers and paints.	Swiss - SR814.013, Hazardous Substances Ordinance Japan - Law Concerning Examination and Regulation of Manufacture and Handling of Chemical Substances.
Examples	CAS Number				
Trichloronaphthalene	1321-65-9				
Tetrachloronaphthalene	1335-88-2				
Pentachloronaphthalene	1321-64-8				
Hexachloronaphthalene	1335-87-1				
Heptachloronaphthalene	32241-08-0				
Octachloronaphthalene	2234-13-1				
Other polychlorinated naphthalenes	various				
<b>A12 - Radioactive Substances</b>	various	Product and Process General ban	Intentionally added	Over-voltage device	Customer requirements
Examples	CAS Number				
Uranium	na				
Plutonium	na				
Radon	na				
Americium	na				
Thorium	na				
Cesium (radioactive isotopes only)	na				
Strontium (radioactive isotopes only)	na				
Other radioactive substances	various				



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<b>A13 - Short Chain Chlorinated Paraffins (Alkanes, C10-13, Cloro)</b>	various	Product General ban	Intentionally added	Used in metal working fluids, lubricants, plasticizers in adhesives, paints, coatings, flame retardant additives in PWB, rubber, plastics and textiles.	EU - REACH Regulation and amendments
<u>Examples</u>	<u>CAS Number</u>				
Chlorinated paraffins	61788-76-9, 63449-39-8 85422-92-0, 97553-43-0 85535-84-8, 85535-85-9				
Other Short Chain Chlorinated Paraffins	Various				
<b>A14 - Tributyl Tin (TBT), Triphenyl Tin (TPT) and its compounds</b>	various	Product General ban	Intentionally added	Coating materials, catalyst, stabilizers, antiseptic agents, marking inks for electronic components and circuit boards	EU - REACH Regulation and amendments; Japan - Law Concerning Examination and Regulation of Manufacture and Handling of Chemical Substances.
<u>Examples</u>	<u>CAS Number</u>				
Tributyl tin and compounds	688-73-3				
Tributyltin fluoride	1983-10-4				
Tributyltin methacrylate	2155-70-6				
Tributyltin sulfamate	6517-25-5				
Bis (tributyltin) phthalate	4782-29-0				
Bis (tri-n-butyltin) dibromosuccinate	31732-71-5				
Bis (tributyltin) fumarate	6454-35-9				
(acetyloxy)tributylstannane	56-36-0				
Bromotributyltin	1461-23-0				
Triphenyltin and compounds	668-34-8				
Triphenyltin	1262-21-1				
Triphenyltin chloride	639-58-7				
Triphenyltin fluoride	379-52-2				
Triphenyltin hydroxide (Fentin hydroxide)	76-87-9				
Triphenyltin acetate (Fentin acetate)	900-95-8				
Triphenyltin N,N-dimethyldithioarbamate	1803-12-9				
Triphenyltin chloroacetate	7094-94-2				

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Others	1631-73-8, 1066-44-0 1066-45-1, 56- 24-6 997-50-2, 2767-54-6 994-31-0				
<b>A15 - Tributyl Tin Oxide (TBTO)</b>	various	Product General ban	Intentionally added	Coating materials, catalyst, stabilizers, antiseptic agents, marking inks for electronic components and circuit boards	EU - REACH Regulation and amendments; Japan - Law Concerning Examination and Regulation of Manufacture and Handling of Chemical Substances.
<u>List</u>	<u>CAS Number</u>				
Bis (tri-n-butyltin) oxide	56-35-9				
<b>Refractory Ceramic Fibers (RCFs)</b>	various	Product General ban	Intentionally added	Insulation for high temperature applications, furnace linings, heater beds.	EU - REACH Regulation and amendments; Customer inquiries
<b>Bis(2-ethylhexyl) phthalate (DEHP)</b>	117-81-7	Product General ban	Intentionally added, or 1000 ppm (homogeneous material basis)	Adhesives, sealants and coating products. Plasticizer, additives for PVC electrical cables	EU - REACH Regulation and amendments; EU - RoHS
<b>Butyl benzyl phthalate (BBP)</b>	85-68-7	Product General ban	Intentionally added, or 1000 ppm (homogeneous material basis)	Adhesives, sealants and coating products. Plasticizer, additives for PVC electrical cables	EU - REACH Regulation and amendments; EU - RoHS
<b>Dibutyl phthalate (DBP)</b>	84-74-2	Product General ban	Intentionally added, or 1000 ppm (homogeneous material basis)	Adhesives, sealants and coating products. Plasticizer, additives for PVC electrical cables	EU - REACH Regulation and amendments; EU - RoHS
<b>Diisobutyl phthalate (DIBP)</b>	84-69-5	Product General ban	Intentionally added, or 1000 ppm (homogeneous material basis)	Adhesives, sealants and coating products. Plasticizer, additives for PVC electrical cables	EU - REACH Regulation and amendments; EU - RoHS

## Applied Materials Restricted and Declarable Substances List

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<b>A16 - PFOA, its isomers, its salts and PFOA-related substances</b>	335-67-1 and others	Product General ban	Intentionally added, or 25 pbb for PFOA, its salts, or 1000 ppm combined PFOA-related substances	mainly used by industry to process PFOA salts, which are used in the production of fluoropolymers and fluoroelastomers. PFOA is also used as a component in fire-fighting equipment, flame retardants, cosmetics, lubricants, paints, textiles, polishes and adhesives, and in herbicide and insecticide formulations	EU - EU POPs Regulation
<b>PFOA, its isomers, its salts</b>					
<u>List</u>	<u>CAS Number</u>				
Perfluorooctanoic acid	335-67-1				
Perfluorooctanoate (conjugate base of the free acid)	45285-51-6				
Branched perfluorooctanoic acid	90480-55-0				
Hexanoic acid, 2,2,3,3,4,4,5,5,6,6,6- nonafluoro-3,4-bis(trifluoromethyl)-	1882109-81-0				
Hexanoic acid, 2,3,3,4,4,5,5,6,6,6- nonafluoro-2,5-bis(trifluoromethyl)-	1882109-80-9				
Hexanoic acid, 2,2,3,3,4,4,5,5,6,6,6- decafluoro-4-(1,1,2,2,2-pentafluoroethyl)-	1882109-79-6				
Hexanoic acid, 2,2,3,3,4,4,5,5,6,6,6- decafluoro-3-(1,1,2,2,2-pentafluoroethyl)-	1882109-78-5				
Pentanoic acid, 2,3,3,4,4,5,5,5-octafluoro- 2-(1,1,2,2,3,3,3-heptafluoropropyl)-	1882109-77-4				
Pentanoic acid, 2,3,3,4,4,5,5,5-octafluoro- 2-[1,2,2,2-tetrafluoro-1- (trifluoromethyl)ethyl]-	1882109-76-3				
Pentanoic acid, 2,2,3,5,5,5-hexafluoro- 3,4,4-tris(trifluoromethyl)-	1882109-75-2				
Pentanoic acid, 2,2,4,5,5,5-hexafluoro- 3,3,4-tris(trifluoromethyl)-	1882109-74-1				
Pentanoic acid, 2,3,3,5,5,5-hexafluoro- 2,4,4-tris(trifluoromethyl)-	1882109-73-0				

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Pentanoic acid, 2,3,4,4,5,5,5-hexafluoro-2,3,4-tris(trifluoromethyl)-	1882109-72-9				
Pentanoic acid, 2,4,4,5,5,5-hexafluoro-2,3,3-tris(trifluoromethyl)-	1882109-71-8				
Pentanoic acid, 3,3,4,5,5,5-hexafluoro-2,2,4-tris(trifluoromethyl)-	1882109-70-7				
Pentanoic acid, 2,2,3,4,5,5,5-heptafluoro-3-(1,1,2,2,2-pentafluoroethyl)-4-(trifluoromethyl)-	1882109-68-3				
Pentanoic acid, 2,2,4,4,5,5,5-heptafluoro-3-(1,1,2,2,2-pentafluoroethyl)-3-(trifluoromethyl)-	1882109-67-2				
Pentanoic acid, 2,3,4,4,5,5,5-heptafluoro-3-(1,1,2,2,2-pentafluoroethyl)-2-(trifluoromethyl)-	1882109-66-1				
Pentanoic acid, 2,3,3,4,5,5,5-heptafluoro-2-(1,1,2,2,2-pentafluoroethyl)-4-(trifluoromethyl)-	1882109-65-0				
Pentanoic acid, 2,3,4,4,5,5,5-heptafluoro-2-(1,1,2,2,2-pentafluoroethyl)-3-(trifluoromethyl)-	1882109-64-9				
Pentanoic acid, 3,3,4,4,5,5,5-heptafluoro-2-(1,1,2,2,2-pentafluoroethyl)-2-(trifluoromethyl)-	1882109-63-8				
Pentanoic acid, 3,4,4,5,5,5-hexafluoro-2,2,3-(trifluoromethyl)-	1882109-69-4				
Butanoic acid, 4,4,4-trifluoro-2,2,3,3-tetrakis(trifluoromethyl)-	1882109-62-7				
Butanoic acid, 2,3,4,4,4-pentafluoro-2-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-3-(trifluoromethyl)-	1882109-61-6				
Butanoic acid, 2,3,3,4,4,4-hexafluoro-2-[2,2,2-trifluoro-1,1-bis(trifluoromethyl)ethyl]-	1882109-60-5				
Butanoic acid, 3,3,4,4,4-pentafluoro-2-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-2-(trifluoromethyl)-	1882109-59-2				
Butanoic acid, 3,3,4,4,4-pentafluoro-2,2-bis(1,1,2,2,2-pentafluoroethyl)-	1882109-58-1				
Hexanoic acid, 2,2,4,4,5,5,6,6,6-nonafluoro-3,3-bis(trifluoromethyl)-	1812247-20-3				
Hexanoic acid, 2,3,3,4,5,5,6,6,6-nonafluoro-2,4-bis(trifluoromethyl)-	1812247-19-0				
Hexanoic acid, 2,3,4,4,5,5,6,6,6-nonafluoro-2,3-bis(trifluoromethyl)-	1812247-18-9				
Hexanoic acid, 3,3,4,4,5,5,6,6,6-nonafluoro-2,2-bis(trifluoromethyl)-	1812247-17-8				

## Applied Materials Restricted and Declarable Substances List

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Hexanoic acid, 2,2,3,3,5,5,6,6,6-nonafluoro-4,4-bis(trifluoromethyl)-	1192593-79-5				
Hexanoic acid, 2,2,3,3,4,5,6,6,6-nonafluoro-4,5-bis(trifluoromethyl)-	1144512-36-6				
Hexanoic acid, 2,2,3,4,4,5,6,6,6-nonafluoro-3,5-bis(trifluoromethyl)-	1144512-35-5				
Hexanoic acid, 2,2,3,3,4,4,6,6,6-nonafluoro-5,5-bis(trifluoromethyl)-	1144512-34-4				
Heptanoic acid, 2,2,3,3,4,5,5,6,6,7,7,7-dodecafluoro-4-(trifluoromethyl)-	1144512-18-4				
Heptanoic acid, 2,2,3,3,4,4,5,6,6,7,7,7-dodecafluoro-5-(trifluoromethyl)-	909009-42-3				
Heptanoic acid, 2,2,3,4,4,5,5,6,6,7,7,7-dodecafluoro-3-(trifluoromethyl)-	705240-04-6				
Heptanoic acid, 2,3,3,4,4,5,5,6,6,7,7,7-dodecafluoro-2-(trifluoromethyl)-	207678-51-1				
Isooctanoic acid, pentadecafluoro-	123116-17-6				
Hexanoic acid, 2,3,3,4,4,5,5,6,6,6-decafluoro-2-(1,1,2,2,2-pentafluoroethyl)-	35605-76-6				
Heptanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,7-dodecafluoro-6-(trifluoromethyl)-	15166-06-0				
Ammonium salt, linear/branched PFOA (Octanoic acid, pentadecafluoro-, branched, ammonium salt)	90480-56-1				
Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, ammonium salt (1:1) ; [Ammonium perfluorooctanoate]	3825-26-1				
Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, sodium salt (1:1); [Sodium perfluorooctanoate]	335-95-5				
Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, potassium salt (1:1); [Potassium perfluorooctanoate]	2395-00-8				
Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, silver(1+) salt (1:1); [Silver perfluorooctanoate]	335-93-3				
Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, chromium(3+) salt (3:1)	68141-02-6				

## Applied Materials Restricted and Declarable Substances List

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Ethanaminium, N,N,N-triethyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8- pentadecafluorooctanoate (1:1)	98241-25-9				
Hexanoic acid, 2,3,3,4,4,5,5,6,6,6- decafluoro-2-(1,1,2,2,2-pentafluoroethyl)- , ammonium salt (1:1)	13058-06-5				
Hexanoic acid, 2,3,3,4,4,5,5,6,6,6- decafluoro-2-(1,1,2,2,2-pentafluoroethyl)- , sodium salt (1:1)	1195164-59-0				
Heptanoic acid, 2,2,3,3,4,4,5,5,6,7,7,7- dodecafluoro-6-(trifluoromethyl)-, ammonium salt (1:1)	19742-57-5				
Heptanoic acid, 2,2,3,3,4,4,5,5,6,7,7,7- dodecafluoro-6-(trifluoromethyl)-, iron salt (1:x)	61436-04-2				
Heptanoic acid, 2,2,3,3,4,4,5,5,6,7,7,7- dodecafluoro-6-(trifluoromethyl)-, potassium salt (1:1)	29457-73-6				
Heptanoic acid, 2,2,3,3,4,4,5,5,6,7,7,7- dodecafluoro-6-(trifluoromethyl)-, sodium salt (1:1)	18017-22-6				
Heptanoic acid, 2,2,3,3,4,4,5,5,6,7,7,7- dodecafluoro-6-(trifluoromethyl)-, chromium salt (1:x)	15739-82-9				
Heptanoic acid, 2,2,3,3,4,4,5,5,6,7,7,7- dodecafluoro-6-(trifluoromethyl)-, aluminum salt (3:1)	15715-47-6				
<b>PFOA-related Substances</b>					
<u>List</u>	<u>CAS Number</u>				
1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,13,13,14,14,15,15,16,16,16- nonacosafuoro-	60699-51-6				
1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,13,13,14,14,14-pentacosafuoro-	39239-77-5				
1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,12-heneicosafuoro-	865-86-1				
1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10- heptadecafluoro-	678-39-7				
2-Pentadecanol, 1,1'-[oxybis[(1-methyl- 2,1-ethanediyl)oxy]]bis[4,4,5,5,6,6,7,7,8,8,9,9 ,10,10,11,11,12,12,13,13,14,14,15,15,15- pentacosafuoro-	93776-00-2				
Perfluorooctyl iodide	507-63-1				

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Undecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11-tricosafuoro-11-iodo-	307-50-6				
Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,12,12-pentacosafuoro-12-iodo-	307-60-8				
Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,12,12,13,13,14,14-nonacosafuoro- 14-iodo-	307-63-1				
Pentadecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,12,12,13,13,14,14,15,15- hentriacontafuoro-15-iodo-	335-79-5				
Tridecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,12,12,13,13-heptacosafuoro-13- iodo-	376-04-5				
Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10 heneicosafuoro-10-iodo-	423-62-1				
Nonane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9- nonadecafluoro-9-iodo-	558-97-4				
Decane, 1,1,1,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10- eicosafuoro-10-iodo-2-(trifluoromethyl)-	677-93-0				
Dodecane, 1,1,1,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,1 1,11,12,12-tetracosafuoro-12-iodo-2- (trifluoromethyl)-	3248-61-1				
Tetradecane, 1,1,1,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,1 1,11,12,12,13,13,14,14-octacosafuoro- 14-iodo-2-(trifluoromethyl)-	3248-63-3				
Decane, 1-bromo- 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,1 0-heneicosafuoro-	307-43-7				
Alkyl iodides, C6-18, perfluoro	90622-71-2				
Phosphinic acid, bis(perfluoro-C6-12- alkyl) derivs.	68412-69-1				
Phosphinic acid, bis(perfluoro-C6-12- alkyl) derivs., aluminum salts	93062-53-4				
2-Dodecenoic acid, 3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,1 2,12-eicosafuoro-	70887-94-4				
Dodecanoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,12-heneicosafuoro-	53826-13-4				

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2-Decenoic acid, 3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10- hexadecafluoro-	70887-84-2				
Decanoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10- heptadecafluoro-	27854-31-5				
1,2-Tridecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,13, 13,13-eicosafuoro-12-(trifluoromethyl)-, 1 (dihydrogen phosphate)	63295-27-2				
1,2-Pentadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,15,15,15-tetracosafuoro-14- (trifluoromethyl)-, 1-(dihydrogen phosphate)	63295-28-3				
1,2-Heptadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,14,15,15,16,17,17,17- octacosafuoro-16-(trifluoromethyl)-, 1- (dihydrogen phosphate)	63295-29-4				
1,2-Tridecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,13-heneicosafuoro-, 1-(dihydrogen phosphate)	94158-70-0				
1,2-Tridecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,13-heneicosafuoro-, 1-(dihydrogen phosphate), diammonium salt	94200-46-1				
1,2-Pentadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,14,15,15,15-pentacosafuoro-, 1 (dihydrogen phosphate), diammonium salt	94200-47-2				
1,2-Heptadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,14,15,15,16,16,17,17,17- nonacosafuoro-, 1-(dihydrogen phosphate), diammonium salt	94200-48-3				
1,2-Tridecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,13, 13,13-eicosafuoro-12-(trifluoromethyl)-, 1 (dihydrogen phosphate), diammonium salt	94200-50-7				
1,2-Pentadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,15,15,15-tetracosafuoro-14- (trifluoromethyl)-, 1-(dihydrogen phosphate), diammonium salt	94200-51-8				
1,2-Heptadecanediol, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,14,15,15,16,17,17,17- octacosafuoro-16-(trifluoromethyl)-, 1- (dihydrogen phosphate), diammonium salt	94200-52-9				



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8:2 Fluorotelomer phosphate monoester; 1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10- heptadecafluoro-, 1-(dihydrogen phosphate)	57678-03-2				
8:2 Fluorotelomer phosphate diester; 1- Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10- heptadecafluoro-, 1,1'-(hydrogen phosphate)	678-41-1				
1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,12-heneicosafuoro-, 1-(dihydrogen phosphate)	57678-05-4				
1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,12-heneicosafuoro-, 1,1'-(hydrogen phosphate)	1895-26-7				
2-Propenoic acid, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,14,15,15,16,17,17,17- octacosafuoro-2-hydroxy-16- (trifluoromethyl)heptadecyl ester	16083-78-6				
2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,13,13,14,14,15,15,16,16,16- nonacosafuorohexadecyl ester	4980-53-4				
2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,13,13,14,14,14- pentacosafuorotetradecyl ester	6014-75-1				
2-Propenoic acid, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,15,15,15-tetracosafuoro-2- hydroxy-14-(trifluoromethyl)pentadecyl ester	16083-87-7				
2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,13,14,14,14-tetracosafuoro-13- (trifluoromethyl)tetradecyl ester	52956-82-8				
2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,12-heneicosafuorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9, 10,10,10-heptadecafluorodecyl 2-methyl- 2-propenoate, methyl 2-methyl-2- propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10, 10,11,11,12,12,13,13,14,14,14- pentacosafuorotetradecyl 2-methyl-2- propenoate and 3,3,4,4,5,5,6,6, 7,7,8,8,8- tridecafluorooctyl 2-methyl-2-propenoate	65104-45-2				
2-Propenoic acid, 2-methyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8- pentadecafluorooctyl ester, polymer with 2-propenoic acid	53515-73-4				

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2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,12,12, 12-eicosafuoro-11- (trifluoromethyl)dodecyl ester	74256-14-7				
2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,13,14,14,14-tetracosafuoro-13- (trifluoromethyl)tetradecyl ester	74256-15-8				
2-Propenoic acid, 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,15,15,15-tetracosafuoro-2- hydroxy-14-(trifluoromethyl)pentadecyl ester	16083-87-7				
2-(Perfluorodecyl) ethyl acrylate; 2- Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,12-heneicosafuorododecyl ester	17741-60-5				
2-(Perfluorodecyl) ethyl methacrylate; 2- Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,12- heneicosafuorododecyl ester	2144-54-9				
8:2 Fluorotelomer acrylate; 2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10- heptadecafluorodecyl ester	27905-45-9				
8:2 Fluorotelomer methacrylate; 2- Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10- heptadecafluorodecyl ester	1996-88-9				
2-Propenoic acid, γ-ω-perfluoro-C8-14- alkyl esters	85631-54-5				
2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,13,13,14,14,15,16,16,16- octacosafuoro-15- (trifluoromethyl)hexadecyl ester	91615-22-4				
2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,13,13,14,14,15,15,16,16,17,18,18,18- dotriacontafuoro-17- (trifluoromethyl)octadecyl ester	94158-63-1				
2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,13,13,14,14,15,16,16,16- octacosafuoro-15- (trifluoromethyl)hexadecyl ester	94158-64-2				
2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,13,13,14,14,15,15,16,16,17,18,18,18- dotriacontafuoro-17- (trifluoromethyl)octadecyl ester	94158-65-3				
Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8- heptadecafluoro-10-iodo-	2043-53-0				

## Applied Materials Restricted and Declarable Substances List

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Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10 heneicosafuoro-12-iodo-	2043-54-1				
Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10 ,11,11,12,12- pentacosafuoro-14-iodo-	30046-31-2				
Hexadecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10 ,11,11,12,12,13,13,14, 14- nonacosafuoro-16-iodo-	65510-55-6				
Undecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9- nonadecafluoro-11-iodo-	65510-56-7				
Alkyl iodides, C4-20, γ-ω-perfluoro	68188-12-5				
Alkyl iodides, C10-12, γ-ω-perfluoro	68390-33-0				
1-Propanaminium, <i>N</i> -(2-carboxyethyl)- <i>N,N</i> - dimethyl-3- [(4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,13,13,14,14,15,15,15-pentacosafuoro- 2-hydroxypentadecyl) amino]-, inner salt	93776-12-6				
1-Propanaminium, <i>N</i> - (2-carboxyethyl)-3- [(4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,12,12,13,13,13-heneicosafuoro-2- hydroxytridecyl)amino] - <i>N,N</i> -dimethyl-, inner salt	93776-13-7				
1-Propanaminium, <i>N</i> -(2-carboxyethyl)- <i>N,N</i> - dimethyl-3- [[4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,13,13,14,15,15,15-tetracosafuoro-2- hydroxy-14- (trifluoromethyl)pentadecyl]amino]-, inner salt	93776-15-9				
2-Tridecanol, 1-[[3- (dimethylamino)propyl]amino]- 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,13, 13,13-eicosafuoro-12-(trifluoromethyl)-	94159-83-8				
2-Pentadecanol, 1-[[3- (dimethylamino)propyl]amino]- 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,14,15,15,15-pentacosafuoro-	94159-79-2				
2-Tridecanol, 1-[[3- (dimethylamino)propyl]amino]- 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,13-heneicosafuoro-	94159-80-5				
2-Pentadecanol, 1-[[3- (dimethylamino)propyl]amino]- 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 13,13,14,15,15,15-tetracosafuoro-14- (trifluoromethyl)-	94159-82-7				

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2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,12-heneicosafuorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10- heptadecafluorodecyl 2-propenoate, hexadecyl 2-propenoate, N- (hydroxymethyl)-2-propenamide, octadecyl 2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12, 12,13,13,14,14,14- pentacosafuorotetradecyl 2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,8- tridecafluorooctyl 2-propenoate	115592-83-1				
2-Propenoic acid, 2-methyl-, C10-16-alkyl esters, polymers with 2-hydroxyethyl methacrylate, Me methacrylate and γ-ω- perfluoro-C8-14-alkyl acrylate	129783-45-5				
2-Propenoic acid, dodecyl ester, polymers with Bu (1-oxo-2- propenyl)carbamate and γ-ω-perfluoro- C8-14-alkyl acrylate	144031-01-6				
Amides, C7-19, α-ω-perfluoro-N,N- bis(hydroxyethyl)	90622-99-4				
Piperazinium, 1-(carboxymethyl)-1-(2- hydroxyethyl)-4- (2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10- nonadecafluoro-1-oxodecyl)-, inner salt	71356-38-2				
2-Propenoic acid, perfluoro-C8-16-alkyl esters	85681-64-7				
2-Propenoic acid, 2-methyl-, C10-16-alkyl esters, polymers with 2- hydroxyethylmethacrylate, Me methacrylate and perfluoro-C8-14-alkyl acrylate	125328-29-2				
Fatty acids, C7-13, perfluoro	68333-92-6				
Fatty acids, C7-19, perfluoro	91032-01-8				
Fatty acids, C7-13, perfluoro, ammonium salts	72968-38-8				
Bis(perfluorooctyl)phosphinic acid	40143-79-1				
Perfluorohexylperfluorooctyl phosphinate	610800-34-5				
Propanamide, 3-[(γ-ω-perfluoro-C4–10- alkyl)thio] derivatives	68187-42-8				
Thiols, C8-20, γ-ω-perfluoro, telomers with acrylamide	70969-47-0				
Carbamic acid, [2-(sulphothio)ethyl]-, C- (γ-ω-perfluoro-C6–9-alkyl) esters, monosodium salts	95370-51-7				
1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro- C4–10-alkyl)thio]methyl] derivatives, phosphates, ammonium salts	148240-85-1				
1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro- C6–12-alkyl)thio]methyl] derivatives, phosphates, ammonium salts	148240-87-3				

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1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro-C10-20-alkyl)thio]methyl] derivs., phosphates, ammonium salts	148240-89-5				
Oxirane, methyl-, polymer with oxirane, mono[2-hydroxy-3-[(γ-ω-perfluoro-C8-20-alkyl)thio]propyl] ethers	183146-60-3				
2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate, alpha-(2-methyl-1-oxo-2-propenyl)-omega-[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1, 2-ethanediyl), 10,11,11,12,12,13,13,14,14,14,16,17,17,18,18,18-tritriacontafuorooctadecyl 2-propenoate 11,11,12,12,13,13,14,14,15,15,16,pentacosafuorotetradecyl 2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16-nonacosafluorohexadecyl 2-propenoate, octadecyl 2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,	116984-14-6				
Pentanoic acid, 4,4-bis[(γ-ω-perfluoro-C8-20-alkyl)thio]derivs., compds. with diethanolamine	71608-61-2				
<b>Decabromodiphenyl ether (DecaBDE)</b>	1163-19-5	Product General ban	0 ppm	Flame retardant in plastic enclosures for televisions, computers, audio and video equipment, textiles and upholstered articles, wire and cables for communication and electronic equipment, and other applications	US TSCA (40 CFR Part 751)
<b>Phenol, isopropylated phosphate (3:1) (PIP (3:1))</b>	68937-41-7	Product General ban	0 ppm	Plasticizer, flame-retardant, anti-wear additive, or anti-compressibility additive in hydraulic fluid, lubricating oils, lubricants and greases, various industrial coatings, adhesives, sealants, and plastic articles.	US TSCA (40 CFR Part 751)

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<b>2,4,6-tris(tert-butyl) phenol (2,4,6-TTBP)</b>	732-26-3	Banned in chemical only	<3000 ppm	Intermediate/reactant in processing; incorporated into formulations destined for fuel and fuel-related additives.	US TSCA (40 CFR Part 751)
<b>Hexachlorobutadiene (HCBD)</b>	87-68-3	Product General ban	0 ppm	Used as a halogenated aliphatic hydrocarbon that is produced as a byproduct during the manufacture of chlorinated hydrocarbons.	
<b>Pentachlorothiophenol (PCTP)</b>	133-49-3	Product General ban	<10000 ppm	Used to make rubber more pliable.	US TSCA (40 CFR Part 751)
<b>Long chain Perfluorocarboxylic acids (PFCAs C9-C14), its salts and related substances</b>	NA	Product General ban	25 ppb for the sum of C9-C14 PFCAs and their salts or	Production of polytetrafluoroethylene (PTFE) and polyvinylidene fluoride (PVDF), surfactants, lubricants, repellents, sealants, filter	EU REACH Regulations
			200 ppb for the sum of C9-C14 PFCAs related substances		
<b>A17-Perfluorohexane-1-sulfonic acid and its salts (PFHxS)</b>	NA	Product General ban	0 ppm	May be used as a plasticizer, lubricant, surfactant, wetting agent, corrosion inhibitor and in fire-fighting foams.	EU POP Regulation
<b>A18-Brominated Flame Retardants (other than PBBs and PBDEs)</b>	NA	NA	0 ppm	Common flame retardant in thermoplastic (e.g., keyboards, housings)	California Prop 65; US ban
<b>List</b>	<b>CAS Number</b>				
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14) [Aliphatic/alicyclic brominated compounds]					
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15) [Aliphatic/alicyclic brominated compounds in combination with antimony compounds]					
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls]					

## Applied Materials Restricted and Declarable Substances List

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Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(17) [Aromatic brominated compounds, excluding brominated diphenyl ether and biphenyls, in combination with antimony compounds]					
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22) [Aliphatic/alicyclic chlorinated and brominated compounds]					
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42) [Brominated organic phosphorous compounds]					
Poly(2,6-dibromo-phenylene oxide)	69882-11-7				
Tetra-decabromo-diphenoxy-benzene	58965-66-5				
1,2-Bis(2,4,6-tribromo-phenoxy) ethane	37853-59-1				
3,5,3',5'-Tetrabromo-bisphenol A (TBBA)	79-94-7				
TBBA, unspecified	30496-13-0				
TBBA-epichlorohydrin oligomer	40039-93-8				
TBBA-TBBA-diglicidyl-ether oligomer	70682-74-5				
TBBA carbonate oligomer	28906-13-0				
TBBA carbonate oligomer, phenoxy end capped	94334-64-2				
TBBA carbonate oligomer, 2,4,6-tribromo phenol terminated	71342-77-3				
TBBA-bisphenol A-phosgene polymer	32844-27-2				
Brominated epoxy resin end-capped with tribromophenol	139638-58-7				
Brominated epoxy resin end-capped with tribromophenol	135229-48-0				
TBBA-(2,3-dibromo-propyl-ether	21850-44-2				
TBBA-bis-(2-hydroxy-ethyl-ether)	4162-45-2				
TBBA-bis-(allyl-ether)	25327-89-3				
TBBA-dimethyl-ether	37853-61-5				
Tetrabromo-bisphenol S	39635-79-5				
TBBS-bis-(2,3-dibromo-propyl-ether)	42757-55-1				
2,4-Dibromo-phenol	615-58-7				
2,4,6-Tribromo-phenol	118-79-6				
Pentabromo-phenol	608-71-9				
2,4,6-Tribromo-phenyl-allyl-ether	3278-89-5				
Tribromo-phenyl-allyl-ether, unspecified	26762-91-4				
Bis(methyl)tetrabromo-phthalate	55481-60-2				
Bis(2-ethylhexyl)tetrabromo-phthalate	26040-51-7				
2-Hydroxyl-propyl-2-(2-hydroxyl-ethoxy)-ethyl-TBP	20566-35-2				
TPPA, glycol-and propylene-oxide esters	75790-69-1				
N,N'-Ethylene-bis-(tetrabromo-phthalimide)	32588-76-4				
Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)	52907-07-0				
2,3-Dibromo-2-butene-1,4-diol	3234-02-4				
Dibromo-neopentyl-glycol	3296-90-0				
Dibromo-propanol	96-13-9				
Tribromo-neopentyl-alcohol	36483-57-5				

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Poly tribromo-styrene	57137-10-7				
Tribromo-styrene	61368-34-1				
Dibromo-styrene grafted PP	171091-06-8				
Poly-dibromo-styrene	31780-26-4				
Bromo-/Chloro-paraffins	68955-41-9				
Bromo-/Chloro-alpha-olefin	82600-56-4				
Vinylbromide	593-60-2				
Tris-(2,3-dibromo-propyl)-isocyanurate	52434-90-9				
Tris(2,4-dibromo-phenyl) phosphate	49690-63-3				
Trish(tribromo-neopentyl) phosphate	19186-97-1				
Chlorinated and brominated phosphate ester	125997-20-8				
Pentabromo toluene	87-83-2				
Pentabromo-benzyl bromide	38521-51-6				
1,3-Butadiene homopolymer, brominated	68441-46-3				
Pentabromo-benzyl-acrylate, monomer	59447-55-1				
Pentabromo-benzyl-acrylate, polymer	59447-57-3				
Decabromo-diphenyl-ethane	84852-53-9				
Tribromobisphenyl-maleinimide	59789-51-4				
Brominated trimethylphenyl-lindane	59789-51-4				
Other Brominated Flame Retardants	various				
Hexabromo-cyclo-dodecane (HBCD), unspecified	3194-55-6				
Tetrabromo-cyclo-octane	31454-48-5				
1,2-dibromo-4-(1,2 dibromo-methyl)-cyclohexane	3322-93-8				
TBPA Na salt	25357-79-3				
Tetrabromo phthalic-anhydride	632-79-1				
<b>Level B Materials - Reportable / Declarables - Including Conflict Minerals</b>					
<b>B1 - Antimony and Antimony compounds</b>	various	NA	0 ppm	Solder alloy, antimony trioxide as flame retardant synergist in plastic housings (e.g., power chargers) and chip encapsulant. CRT glass. It typically has been used in combination with brominated flame retardant and PVC.	Toxic to Reproduction. REACH Restrictions
<b>Examples</b>	<b>CAS Number</b>				
Antimony (metallic)	7440-36-0				
Antimony trioxide	1309-64-4				
Antimony pentoxide	1314-60-9				
Antimony pentasulfide	1315-04-4				
Antimony trichloride	10025-91-9				
Antimony trifluoride	7783-56-4				
Antimony trisulfide	1345-04-6				
Antimony mercaptan	na				
Gallium antimonide	12064-03-8				
Indium antimonide	1312-41-0				



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Sodium antimonide	na				
Other antimony compounds	various				
<b>B2 - Arsenic and Arsenic compounds</b>	various	Disclosed	1000 ppm	Arsenic is used as dopant in semiconductor manufacture.	EU - REACH Regulation and amendments; Toxic, carcinogenic, Customer inquiries
<u>Examples</u>	<u>CAS Number</u>				
Arsenic	7440-38-2				
Arsenic pentoxide	1303-28-2				
Arsenic trioxide	1327-53-3				
Arsenic pentasulfide	1303-34-0				
Arsenic trisulfide	1303-33-9				
Gallium arsenide	1303-00-0				
Calcium arsenate	7778-44-1				
Calcium arsenite	27152-57-4				
Potassium arsenite	10124-50-2				
Potassium arsenate	7784-41-0				
Lead arsenate	3687-31-8				
10,10'-Oxybis-10H-phenoxarsine	58-36-6				
Other arsenic compounds	various				
<b>B3 - Beryllium and Beryllium compounds</b>	various	Disclosed	1000 ppm	Used as alloy with copper for electrical contacts and springs,	Toxic, Customer inquiries
<u>Examples</u>	<u>CAS Number</u>				
Beryllium	7440-41-7				
Beryllium-aluminum alloy	12770-50-2				
Beryllium chloride	7787-47-5				
Beryllium fluoride	7787-49-7				
Beryllium hydroxide	13327-32-7				
Beryllium oxide	1304-56-9				
Beryllium phosphate	13598-15-7				
Beryllium sulfate	13510-49-1				
Beryllium sulfate tetrahydrate	7787-56-6				
Beryl ore	1302-52-9				
Other beryllium compounds	various				
<b>B4 - Bismuth and Bismuth compounds</b>	various	Disclosed	1000 ppm	Electronic equipment	Negative for recycling
<u>Examples</u>	<u>CAS Number</u>				
Bismuth	7440-69-9				
Bismuth trioxide	1304-76-3				
Bismuth nitrate	10361-44-1				
Other bismuth compounds	various				
<b>B5 - Nickel and Nickel compounds</b> <i>[Nickel alloys are not reportable. Nickel and nickel compounds must be reported when used in applications where nickel compounds are likely to result in prolonged skin exposure.]</i>	various	NA	0.28 µg/cm2/week leach rate	Surface finish, anticorrosion, seed layer for immersion-less gold surface finish.	EU - REACH Regulation and amendments; Customer inquiries
<u>Examples</u>	<u>CAS Number</u>				
Nickel	7440-02-0				
Nickel acetate	373-02-4				
Nickel carbonate	3333-67-3				
Nickel carbonyl	13463-39-3				

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Nickel hydroxide	12054-48-7 or 11113-74-9				
Nickelocene	1271-28-9				
Nickel oxide	1313-99-1				
Nickel sulfide	12035-72-2				
Nickel dioxide	12035-36-8				
Nickel (II) hydroxide	12054-48-7				
Other nickel compounds	various				
<b>B6 - Phthalates</b>	various	Disclosed	1000 ppm	Plasticizer, additives PVC electrical cables	EU - REACH Regulation and amendments; Customer inquiries
<u>List</u>	<u>CAS Number</u>				
Diisononyl phthalate ( <b>DINP</b> )	28553-12-0				
Diethyl phthalate	84-66-2				
Dimethyl phthalate	131-11-3				
Diheptyl phthalate	3648-21-3				
Diisonoryl phthalate	28553-12-0				
Ditridecyl phthalate	119-06-2				
Dicyclohexyl phthalate	84-67-7				
Di-sec-octyl phthalate ( <b>DEHP</b> )	117-81-7				
Dibutyl phthalate ( <b>DBP</b> )	84-74-2				
Diisodecyl phthalate	26761-40-0				
Bis(n-octyl) phthalate ( <b>DNOP</b> )	117-84-0				
Butyl benzyl phthalate ( <b>BBP</b> )	85-68-7				
<b>B7 - Selenium and Selenium compounds</b>	various	Disclosed	1000 ppm	Used in diodes and light detectors (lead selenide). Historically used as photoelectric coating.	Customer inquiries
<u>Examples</u>	<u>CAS Number</u>				
Selenium and materials	7782-49-2				
Hydrogen selenide	7783-07-5				
Sodium selenide	1313-85-5				
Selenium dioxide	7446-08-4				
Sodium selenate	10112-94-4				
Dimethyl selenide	593-79-3				
Selenium oxide	12640-89-0				
Other selenium compounds	various				
<b>B8 - Vinyl Chloride Polymer (PVC)</b>	9002-86-2	Disclosed	1000 ppm	Plastic, housings, cables, flexible CD jackets	EU - REACH Regulations and amendments Customer inquiries
<b>B9 - Tin and Tin compounds</b>	various	Disclosed	Intentionally added	Solder, semiconductors, printed circuits boards	US Dodd-Frank Act (Conflict Minerals Rule) Customer inquiries
<u>Examples</u>	<u>CAS Number</u>				
Tin (metal)	7440-31-5				
Tin (IV) Oxide, Stannic Oxide	18282-10-5				
<b>B10 - Tungsten and Tungsten compounds</b>	various	Disclosed	Intentionally added	Semiconductors, PVD targets	US Dodd-Frank Act (Conflict Minerals Rule) Customer inquiries

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<b>Examples</b>	<b>CAS Number</b>				
Tungsten (metal)	7440-33-7				
Tungsten (VI) oxide	1314-35-8				
Tungsten (IV) oxide	12036-22-5				
<b>B11 - Tantalum and Tantalum compounds</b>	various	Disclosed	Intentionally added	Semiconductors, PVD targets	US Dodd-Frank Act (Conflict Minerals Rule) Customer inquiries
<b>Examples</b>	<b>CAS Number</b>				
Tantalum (metal)	7440-25-7				
Tantalum oxide	1314-61-0				
<b>B12 - Gold and Gold compounds</b>	various	Disclosed	Intentionally added	Semiconductors, PVD targets, printed circuits boards, connectors	US Dodd-Frank Act (Conflict Minerals Rule) Customer inquiries
<b>Examples</b>	<b>CAS Number</b>				
Gold (metal)	7440-57-5				
Gold(III) chloride trihydrate	16961-25-4				
Gold(III) chloride hydrate	27988-77-8				
<b>B13 - Cobalt and Cobalt compounds</b>	various	Disclosed	Intentionally added	Semiconductors, PVD targets	Customer inquiries
<b>Examples</b>	<b>CAS Number</b>				
Cobalt (metal)	7440-48-4				
Cobalt (II) acetate	71-48-7				
Cobalt (III) acetate	917-69-1				
Cobalt (II) oxide	1307-96-6				
Cobalt (III) oxide	1308-04-9				
<b>Per- and polyfluoroalkyl substances (PFAS) as defined in TSCA Section 8(a)(7) (40 CFR 705.3):</b> any chemical substance or mixture containing a chemical substance that structurally contains at least one of the following three sub-structures: PFAS not included in the definition under TSCA Section 8(a)(7) but within scope of the following definition: 1.Non-polymeric PFAS Group: a.Perfluoroalkyl acids, including but not limited to perfluoroalkyl carboxylic acids and perfluoroalkane sulfonic acids; b.Compounds derived from perfluoroalkane sulfonyl fluoride (PASf); c.Fluorotelomer (FT)-based compounds; and d.Per- and polyfluoroalkyl ether (PFPE) – based compounds. 2.Polymeric PFAS Group: a.Fluoropolymers, b.Side-chain fluorinated polymers c.Perfluoropolyethers		NA	Intentionally added	PFAS chemicals are used in articles such as cables, harnesses, plastics, coated screws, cooling tanks, monitors/sensors, o-rings, seals, tank covers, tubing and fittings (rigid or flexible), liquid delivery systems and more. They are also used in lubricants and greases.	U.S. Toxic Substances and Control Act (TSCA) Section 8(a)(7); potential or known human health and/or environmental risks; may be persistent and bioaccumulative

## Applied Materials Restricted and Declarable Substances List

Material Category "List" means limited to the listing, "Examples" means non-exhaustive	CAS Number	Prohibition Type (Banned / Disclosed)	Threshold for Disclosure (based on Item's total weight, unless otherwise noted)	Industry Uses	Reason for Inclusion
<b>PFAS not included in the definition under TSCA Section 8(a)(7) but within scope of the following definition:</b> 1.Non-polymeric PFAS Group: a.Perfluoroalkyl acids, including but not limited to perfluoroalkyl carboxylic acids and perfluoroalkane sulfonic acids; b.Compounds derived from perfluoroalkane sulfonyl fluoride (PASf); c.Fluorotelomer (FT)-based compounds; and d.Per- and polyfluoroalkyl ether (PFPE) – based compounds. 2.Polymeric		NA	Intentionally added	PFAS chemicals are used in articles such as cables, harnesses, plastics, coated screws, cooling tanks, monitors/sensors, o-rings, seals, tank covers, tubing and fittings (rigid or flexible), liquid delivery systems and	<a href="https://www.oecd.org/chemicalsafety/po-rtal-perfluorinated-chemicals/aboutpfass/">OECD Definition: https://www.oecd.org/chemicalsafety/po-rtal-perfluorinated-chemicals/aboutpfass/</a>
					PFAS regulations other than TSCA 8(a)(7) may leverage the OECD definition; customer inquiries