

GUESS GLOBAL

List of Restricted Substances and Materials



*Apparel, Footwear, Accessories,
Luggage & Jewelry*



| | |
|--|-----------|
| 1. SCOPE | 4 |
| 2. BANNED MATERIALS | 4 |
| 3. RESTRICTED MATERIALS | 5 |
| 4. APPAREL , FOOTWEAR, ACCESSORIES & LUGGAGE | 7 |
| 4.1 ALL PRODUCTS– JEWELRY EXCLUDED | 7 |
| 4.2 CA PROP 65 REQUIREMENTS | 13 |
| 5. CHEMICAL SAFETY REQUIREMENT | 14 |
| 5.1 ADULTS | 14 |
| a. Chemical safety requirements for <i>textile, polymeric and other materials, leather and light industry products made from them</i> | 14 |
| b. Chemical safety requirements for <i>textile materials and products from them treated with textile-processing chemicals</i> | 15 |
| c. Chemical safety requirements for <i>leather accessories and materials for their manufacturing depending on material composition</i> | 16 |
| 5.2 KIDS | 17 |
| a. Chemical safety requirements for <i>textile materials</i> | 17 |
| b. Chemical safety requirements for <i>textile materials and products from them treated with textile-processing chemicals*</i> | 17 |
| c. Chemical safety requirements for <i>leather accessories and materials for their manufacturing depending on material composition</i> | 19 |
| 6. JEWELRY | 20 |
| a. Metal parts | 20 |
| b. Glass and crystal parts | 22 |
| c. Plastic parts | 22 |
| d. Wood parts | 23 |
| e. Ceramic parts | 24 |
| f. GB 28480 | 24 |
| g. ASTM F2923 for Children Jewelry | 25 |
| h. ASTM F2999 for Adult Jewelry | 27 |
| 7. PACKAGING MATERIAL | 30 |
| 8. LIST OF RESTRICTED SUBSTANCES | 31 |
| a. Azo dyes & Arylamine salts | 31 |
| b. Phenols | 31 |
| c. Phthalates | 32 |
| d. Flame Retardants | 32 |
| e. Organotin Compounds | 33 |
| f. Pesticides | 33 |
| g. Asbestos | 35 |



| | |
|--|----|
| h. Metals | 35 |
| i. Polycyclic Aromatic Hydrocarbons (PAHs) | 35 |
| j. Misc. | 36 |
| k. Others | 37 |
| l. Carcinogenic Dyes and Allergenic Disperse Dyes | 37 |
| m. Chlorinated toluenes and Chlorinated benzenes | 38 |
| n. Volatile Organic Compounds (VOCs) | 38 |



GUESS is committed to enhance the sustainability of both its global operations and local communities and connect customers with more sustainable fashion choices. Building on that commitment, Guess has developed our List of Restricted Substances and Materials (LRSM) as a requirement to our suppliers and as assurance to our customers.

This LRSM identifies the chemicals we will limit or prohibit in our products or in the production process due to their potential impact on consumers, workers and the environment. It provides up-to-date information to our business partners, including direct sources and licensees, on product compliance with international consumer products regulations, to the best of our knowledge.

We continue to monitor changes in legal requirements as well as industry best practices and update this list as necessary. Additionally, we will collaborate and communicate with industry partners to foster these goals.

1. SCOPE

All GUESS branded products must comply with the relevant requirements.

2. BANNED MATERIALS

| Type of materials | Remarks |
|--|---|
| Real Fur | In any part of the goods |
| Angora Wool or Hair (from Angora Rabbit) | In any part of the goods |
| Mohair (Angora Goat Hair) | In any part of the goods |
| Exotic Leather (or other part from vulnerable, endangered, or wild-caught species) | In any part of the goods |
| <p><u>USE of MICROPLASTIC</u> OFFICIAL AMENDMENT to the 2023/2055 REACH Protocol on product construction and composition (attachment XVII of the 1907/2006/CE REACH Protocol). The objective of the restriction is to FORBID THE COMMERCIALISATION OF MICROPLASTICS as such, of products featuring microplastics, or of products that release microplastics during their use. The European Commission has clarified that it is not an absolute prohibition, but that it refers to certain <u>NON-BIODEGRADABLE GLITTERS</u> and excludes the following:</p> <ul style="list-style-type: none"> - Glitters made of non-organic material (metal, glass), natural, biodegradable or soluble in water. - Pearls, sequins, or other decorations that can sew or threaded. - Glitters that, when used, are trapped in a solid base (e.g., glue glitters), in a solid object (e.g., glitter inside jewelry) or completely inside an object (e.g., boule de neige) - Glitters that are considered an integral part of an article as per REACH Protocol. <p>Specifically, for GUESS product categories</p> | <p>In any part of the goods and packaging</p> |



| | |
|--|--|
| <ul style="list-style-type: none">- Responsible Down Standard is required. <p><u>Wool</u></p> <ul style="list-style-type: none">- No wool from mulesing shearing- Responsible Wool Standard preferred <p><u>Manmade Cellulosic Fibers</u></p> <ul style="list-style-type: none">- FSC and PEFC certified forest sources are preferred- Shall not be sourced from currently endangered species habitat, ancient and endangered forests. <p><u>Preferred Cotton Sources</u></p> <ul style="list-style-type: none">- Organic Cotton;- Additional Preferred Alternatives (i.e. recycled, made in Africa, etc.): alternatives to sourcing conventional cotton by exploring recycled and upcycled fibers as well as other cotton produced with a higher environmental and social standard. For any new Cotton sourcing, please contact GUESS Sustainability team. <p><u>Prohibited Cotton Sources</u></p> <p>In recognition that cotton sourced from certain regions may present risks of Human Rights violation, including but not limited to forced child labor, GUESS seeks to prohibit any such cotton from entering our supply chain (for e.g. Cotton coming from Turkmenistan and Uzbekistan, Xinjiang-China , ...). GUESS monitors these risks as they emerge and takes management measures accordingly.</p> <p><u>Electroplating of the hardware trims for apparel</u></p> <p>Suppliers who supply or manufacture components, parts or products containing conflict minerals are expected to source those minerals from socially and environmentally responsible sources that do not directly or indirectly contribute to conflict. Without limiting the foregoing, suppliers are expected to directly and indirectly source conflict minerals only from sources that do not directly or indirectly finance or benefit “armed groups” (as that term is defined in the Conflict Minerals Rule) in the DRC or another covered country. This it applies to conflict minerals contained in components or parts of products supplied to or manufactured for GUESS, irrespective of whether the supplier or manufacturer of the product has manufactured or provided the specifications for the particular component or part.</p> | <p>In any part of the goods</p> <p>For full language on GUESS Responsible sourcing policies, please visit “REPORTS and RESOURCES” on sustainability.guess.com</p> |
|--|--|

As for the dated test methods, only the edition cited applies. For undated test methods, the latest edition of the document available applies (including upgrades).



4. APPAREL, FOOTWEAR, ACCESSORIES & LUGGAGE

4.1 ALL PRODUCTS– JEWELRY EXCLUDED

| Characteristic | Test Method* | Requirement |
|--|---|---|
| Azo dyes & Arylamine salts | Textile: ISO 14362-1; ISO 14362-3 Leather: ISO 17234-1; ISO 17234-2 | Textile: max. 20 mg/kg Leather: max. 20 mg/kg |
| Disperse dyes (allergenic) and Carcinogenic dyes | DIN 54231 | 30 mg/kg |
| pH | Textile: ISO 3071 Leather: ISO 4045 | Textile: Apparel: 4.5-7.5 Footwear 4.0 – 7.5 Accessories: 4 – 8.5 Leather: Footwear & Accessories: 3.5 – 7.0 ($\Delta\text{pH}\leq 0.7$) Footwear & Accessories > 3 years: 3.2 – 7.0 |
| Formaldehyde | Textile: ISO 14184-1; JIS L 1041 Leather: ISO 17226-1 Wood: ISO EN 717-3 | Textile: 16 mg/kg Leather: 16 mg/kg (infant); 75 mg/kg (Children and Adult) Wood Adult: no skin contact / max. 300 mg/kg |
| | [EAc]: GOST 25617 STB ISO 14184-1 ISO 14184-2 Leather: STB ISO 17226-1 GOST ISO 17226-1 GOST ISO 17226-2 FAUX FUR: GOST 31280 | KIDS SWIMWEAR and UNDERWEAR First layer: 0-3 years: $\leq 20 \mu\text{g/g}$ 3-18 years: $\leq 75 \mu\text{g/g}$ BEACHWEAR: 0-18 years: $\leq 75 \mu\text{g/g}$ DENIM, KNIT and WOVEN First layer: 0-3 years: $\leq 20 \mu\text{g/g}$ 3-18 years: $\leq 75 \mu\text{g/g}$ Second layer: 0-1 year: $\leq 20 \mu\text{g/g}$ 1-18 years: $\leq 75 \mu\text{g/g}$ Third layer: 0-1 year: $\leq 20 \mu\text{g/g}$ 1-18 years: $\leq 75 \mu\text{g/g}$ SWEATER Second layer : |



| Characteristic | Test Method* | Requirement |
|-----------------|--|---|
| | | 0-1 year: : ≤ 20 µg/g 1-18 years: ≤ 75 µg/g LEATHER: ≤ 20 µg/g Faux Fur 0-1 year: : ≤ 20 µg/g 1-18 years: ≤ 75 µg/g |
| Formaldehyde | [EAc]: GOST 25617 STB ISO 14184-1, ISO 14184-2 Leather: STB ISO 17226-1 GOST ISO 17226-1 GOST ISO 17226-2 FUAX FUR: GOST 31280 | ADULTS SWIMWEAR, BEACHWEAR, UNDERWEAR First layer: ≤ 75 µg/g DENIM, KNIT and WOVEN First, Second and Third layer : ≤ 75 µg/g SWEATER Second layer : ≤ 75 µg/g ACCESSORIES ≤ 75 µg/g for kerchief and scarf products, handkerchiefs and other similar products ≤75 µg/g for gloves, mittens and other similar products Leather: ≤ 300 µg/g Leather Lining: ≤ 75 µg/g FAUX FUR : ≤ 300 µg/g |
| Phthalates | CPSC–CH–C 1001-09.4 | 1000 mg/kg (sum) of 21P |
| Lead content | Metal: CPSC-CH-E1001-08.3 Non-metal: CPSC-CH-E1002-08.3 Paint and Surface coating: CPSC CH E1003 9.1 | Babies and children’s products [Coating (scratchable) and Prints (Non- scratchable), Plastic trims, Foams, Rubbers, Metal Trims (e.g. Button, Zipper), Leather]: Surface coating: < 90 mg/kg Substrate (including glass): < 100 mg/kg Adults [Coating (scratchable) and Prints (Non-scratchable), Plastic trims, Foams, Rubbers, Metal Trims (e.g. Button, Zipper), Leather]: Surface coating: < 90 mg/kg Substrate (except glass): < 100 mg/kg Glass: < 500 mg/kg |
| Cadmium content | EN 16711-1 | < 40 mg/kg for kids < 75 mg/kg for adult (except plastics and jewelry) < 100 mg/kg for adult plastics and jewelry |



| Characteristic | Test Method* | Requirement |
|--|--|---|
| Chromium VI content | ISO 17075-1:2017 with aging confirmation by ISO 17075-2:2017 Ageing condition: ISO 10195:2018 method A2 | 3.0 mg/kg |
| Chromium VI content | [EAc]: Leather : GOST R ISO 17075 FAUX FUR: GOST 31280 | KIDS Leather: not allowed Faux Fur : 0-1 year: not allowed 1-18 years: ≤ 3.0 mg/kg ADULTS Leather and Faux Fur: ≤ 3.0 mg/kg |
| Nickel release | EN 1811(after ageing EN 12472 if coated) | Metal Components 0.5 µg/cm ² /week for non-pierced components 0.2 µg/cm ² /week for pierced components |
| Lead release | EN 16711-3 | ≤ 0.05% by weight That limit shall not apply where it can be demonstrated that the rate of lead release does not exceed 0.05 µg/cm ² per hour (equivalent to 0.05 µg/g/h), For articles or accessible parts (smaller than 5 cm in one dimension or has a detachable or protruding part of that size) thereof may, during normal or reasonably foreseeable conditions of use, be placed in the mouth by children. |
| | | |
| Mercury | Non-leather: EN 16711-1 Leather: ISO 17072-2 | 10 mg/kg |
| Arsenic | Non-leather: EN 16711-1 Leather: ISO 17072-2 | 100 mg/kg |
| Extractable Cadmium - acid synthetic perspiration solution | Non-leather: EN 16711-2 Leather: ISO 17072-1 | ≤ 1 mg/kg |
| Extractable Arsenic - acid synthetic perspiration solution | Non-leather: EN 16711-2 Leather: ISO 17072-1 | ≤ 1 mg/kg |
| Extractable Lead - acid synthetic perspiration solution | Non-leather: EN 16711-2 Leather: ISO 17072-1 | ≤ 1 mg/kg |
| Extractable Chromium VI - acid synthetic perspiration solution | Non-leather: EN 16711-2 Leather: ISO 17072-1 | ≤ 1 mg/kg |



| Characteristic | Test Method* | Requirement |
|--|--|---|
| Alkylphenols and Alkylphenols ethoxylates (APEO) | <p>AP Textile / Leather: EN ISO 21084:2019</p> <p>Polymers and all other materials: 1 g sample/20 mL THF, sonication for 60 minutes at 70 degrees C, analysis according to EN ISO 21084:2019</p> <p>APEO Non-leather: ISO 18254-1:2016 with determination of APEO</p> <p>Leather: ISO 18218-1:2015 Feathers and Down; GB/T 23322-2018 LC-MS analysis</p> | NPEO: 100 mg/kg |
| Organotin compounds | <p>Textile: ISO 22744-1 Non-textile: CEN ISO/TS 16179</p> | <p>Tri-substituted organostannic compounds: 0.1% by weight of tin DBT: 0.1% by weight of tin DOT: 0.1% by weight of tin</p> |
| Chlorinated Phenols | <p>Textile: Modified § 64 LFGB BVL B82.02.8 with alkaline digestion Leather: ISO 17070:2015</p> | PCP/TeCP: 0.5 mg/kg(each) |
| Chlorinated benzenes and toluenes | EN 17137 | 1 mg/kg (sum) |
| N,N-Dimethylacetamide (DMA) | ISO/TS 16189 | < 3000 mg/kg |
| Acrylonitrile monomer | GC-MS HS | Max 2 mg/dm ³ |
| Dimethylformamide (DMF) | ISO/TS 16189 | < 500 mg/kg |
| N-Methyl-2-Pyrrolidone (NMP) | ISO/TS 16189 | < 3000 mg/kg |
| Polycyclic Aromatic Hydrocarbons (PAH) | AFPS GS 2019:1 | <p>< 0.5 mg/kg (each) for kids, < 1 mg/kg (each) for adults, 10 mg/kg (sum)</p> |



| Characteristic | Test Method* | Requirement |
|---|--------------------------------------|---|
| Other Volatile Content | GCMS-HS (120°C for 45min) | 1,2-Dichloroethane/Acetophenone/Toluene: 10 mg/kg (each) 2-Phenyl-2-Propanol: 20 mg/kg Styrene/ Xylene: 30 mg/kg (each) Cyclohexanone/ 2-Butanone (MEK)/ Tetrachloroethylene/ Trichloroethylene: 50 mg/kg (each) Phenol: 100 mg/kg Formamide: 200 mg/kg Benzene: 1 mg/kg <i>Total sum ≤ 500 mg/kg</i> |
| Odour | GB 18401 section 6.7 | Odourless |
| Dimethylfumarate (DMFu) | ISO 16186 | < 0.1 mg/kg |
| Pesticides/ Herbicides | US EPA 8081A/8151A | 0.1 mg/kg (sum) Except: 2-Octylisothiazol-3(2H)-on: 250 mg/kg 2-Phenylphenol: 1000 mg/kg leather 100 mg/kg other 2-(Thiocyanomethylthio)-Benzothiazole: 500 mg/kg Triclosan 50 mg/kg 4-Chlor-3-Methylphenol (CMK) 600 mg/kg leather |
| N-Nitrosamine | GB/T 24153 | 0.5 mg/kg |
| Per- and polyfluoroalkyl substances (PFAS) (required if material treated with water/oil/stain repelling agent or contamination is suspected) | All materials: ISO 23702-2018 | Polyfluorinated chemicals (PFOS) and its related substances: 1 µg/m ² |
| | | Perfluorooctanoic acid (PFOA) and its salts: 0.025 mg/kg and 1 ug/m ² |
| | | Perfluorooctanoic acid (PFOA) related substances: 1 mg/kg (each and sum) |
| | | C9-C14 Perfluorocarboxylic acid (PFCA) and its salts: 0.025 mg/kg (sum) |
| | | C9-C14 Perfluorocarboxylic acid (PFCA) related substances: 0.26 mg/kg (sum) |
| | | PFHxS and its salts: 25 µg/kg (0.025 mg/kg) (sum) |
| | | PFHxS-related compounds: 1000 µg/kg (1 mg/kg) (sum) |
| FTOH: 0.01 mg/kg (each) | | |
| Fluorine Screening – As PFAS Indicator (required if material treated with water/oil/stain repelling agent or contamination is suspected) | EN 14582 (by total fluorine content) | Prohibited (Reporting limit = 50 mg/kg of total fluorine content) |



| Characteristic | Test Method* | Requirement |
|---|---|--|
| Short chain chlorinated paraffins | Leather: ISO 18219-1:2021 Textiles: ISO 22818:2021 | Max. 1000 mg/kg |
| Brominated and chlorinated flame retardants (if flame retardant treated) | GB/T 24279 | Tris(2-chloroethyl)phosphate (TCEP) : 5 mg/kg Others : 10 mg/kg |
| Index of Toxicity | GOST P 53485 | ACCESSORIES (Kerchief and scarf products, handkerchiefs and other similar products; gloves, mittens and other similar products) In aqueous medium shall be from 70 to 120 percent inclusive In the air medium from 80 to 120 percent inclusive, or the local irritative effect shall be absent UNDERWEAR, SWIMWEAR, BEACHWEAR, DENIM (first-second layer), WOVEN (first-second layer), KNIT (first-second layer), SWEATER (second layer) In aqueous medium shall be from 70 to 120 percent inclusive In the air medium from 80 to 120 percent inclusive Alternatively, the local irritative effect shall be absent. |
| Quinoline | DIN 54231 | 50 mg/kg |
| Asbestos | Microscopic examination | Prohibited |
| Vinyl Chloride Monomer (VCM) | GB/T 7573 | 5 mg/kg |
| Soluble Heavy Metals | GB 21550 Clause 5.4 | Lead: 90 mg/kg Cadmium: 75 mg/kg |
| Other Volatile Substances | GB 21550 Clause 5.5 | 20 g/m ² |
| AOX | In-house method | 5 mg/kg |
| Glyoxal and other short-chain aldehydes | In-house method | 20 mg/kg |
| Cyclic siloxanes (D4,D5, D6) | In-house method | 1000 mg/kg |
| Azodicarboxamide/ Azodicarbonamide/ Diazene-1,2-dicarboxamide (ADCA) | In-house method | 1000 mg/kg |



| Characteristic | Test Method* | Requirement |
|------------------------------|-----------------|--|
| Preservative | ISO 13365 | 2-Octylisothiazol-3(2H)-one = 250 mg/kg 2-Phenylphenol = 1000 mg/kg (leather); 100 mg/kg (other) 2-(Thiocyanomethylthio)-Benzothiazole=500 mg/kg Triclosan = 50 mg/kg 4-Chlor-3-Methylphenol = 600 mg/kg (leather) |
| Ozone depleting substances | In house method | (EC) No 1005/2009 5 mg/kg |
| Fluorinated Greenhouse Gases | In house method | (EC) No. 842/2006 0.1 mg/kg |
| SVHCs | In-house method | 1000 mg/kg (each) https://echa.europa.eu/candidate-list-table |

*All applicable test method in EAC are present in the annex to TR 007, 017.

4.2 CA PROP 65 REQUIREMENTS

Proposition 65 requires businesses to provide warnings to Californians about significant exposures to chemicals that cause cancer, birth defects or other reproductive harm. These chemicals can be in the products that Californians purchase, in their homes or workplaces, or that are released into the environment.

GUESS requires all suppliers to conform to the latest version of the Proposition.

For detailed information& requirements, please visit <https://oehha.ca.gov/media/downloads/proposition-65/p65list010320.pdf>

| Characteristic | Requirement |
|---------------------------|--|
| California Proposition 65 | All samples shall be reviewed against the requirement of California Proposition 65 settlement case to determine if additional testing or labelling is required |



5. CHEMICAL SAFETY REQUIREMENT

5.1 ADULTS

a. Chemical safety requirements for **textile, polymeric and other materials, leather and light industry products made from them**

| Materials for product manufacturing | Name of determined substance | Requirement | |
|---|-----------------------------------|---|--|
| | | water medium, (mg/dm ³), no more than | air medium, (mg/m ³), no more than |
| Natural materials from vegetative raw materials | Formaldehyde* | - | 0.003 |
| CardboardArtificial (viscose and acetate) | Formaldehyde* | - | 0.003 |
| Polyester | Formaldehyde* | - | 0.003 |
| Polyamide | Formaldehyde* | - | 0.003 |
| | Caprolactam | 1.0 | 0.06 |
| | Hexamethylenediamine | 0.01 | 0.001 |
| Polyacrylonitrile | Formaldehyde* | - | 0.003 |
| | Acrylonitrile | 2.0 | 0.03 |
| | Dimethyl formamide | 10 | 0.03 |
| Polyvinylchloride | Formaldehyde* | - | 0.003 |
| | Acetone | - | 0.003 |
| | Benzene | 2.2 | 0.35 |
| | Toluene | 0.01 | 0.1 |
| | Diethylphthalate | 0.5 | 0.6 |
| | Dibutylphthalate | 2.0 | 0.02 |
| | Diethylbenzene-1,2-dicarbonate | not allowed | not allowed |
| | Cadmium (Cd) | 2.0 | 0.02 |
| | Zinc (Zn) | 0.001 | - |
| | Chloroethane | 0.1 | - |
| | (vinyl chloride) | 0.01 | 0.01 |
| Polyvinylacetate | Formaldehyde* | - | 0.003 |
| | Vinyl acetate | 0.2 | 0.15 |
| Polyolefine | Formaldehyde* | - | 0.003 |
| | Acetaldehyde | 0.2 | 0.01 |
| Polyurethane | Formaldehyde* | - | 0.003 |
| | Ethylene glycol | 1.0 | 1.0 |
| | Acetaldehyde Toluene diisocyanate | 0.2 | 0.01 |
| | Benzene | - | 0.002 |
| | Toluene | 0.01 | 0.1 |
| | | 0.5 | 0.6 |



| Materials for product manufacturing | Name of determined substance | Requirement | |
|--|--|---|--|
| | | water medium, (mg/dm ³), no more than | air medium, (mg/m ³), no more than |
| Polyorganosiloxane (silicones) | Formaldehyde* | - | 0.003 |
| | Acetaldehyde | 0.2 | 0.01 |
| | Methanole | 3.0 | 0.5 |
| Leather, Faux Fur | Formaldehyde* | 300 | 0.003 |
| | Mass fraction of water-washable chrome (VI), mg/kg | - 3.0 | - - |
| Rubber | Formaldehyde* | - | 0.003 |
| | Thiuram | 0.5 | - |
| | Diethylphthalate | 2.0 | 0.02 |
| | Dibutylphthalate | not allowed | not allowed |
| Extracted chemical elements (depending on colorant) | Arsenic (As) | 1.0 | - |
| | Lead (Pb) | 1.0 | - |
| | Chromium (Cr) | 2.0 | - |
| | Cobalt (Co) | 4.0 | - |
| | Copper (Cu) | 50.0 | - |
| | Nickel (Ni) | 4.0 | - |

NOTES:

* The content of free formaldehyde shall be determined in all kinds of materials and shall be:

- No more than 75 g/g in clothes and materials for clothes of the first layer, inside layers of footwear, house and beach footwear;
- No more than 300 g/g for other products. The normative is specified without background air pollution.

b. Chemical safety requirements for *textile materials and products from them treated with textile-processing chemicals*

| Name of evolving volatile chemical | Requirements: air medium (mg/m ³), no more than |
|--|---|
| Methylacrylate, Methylmethacrylate, Acetaldehyde | 0.01 |
| Styrene | 0.002 |
| Xylenes (a mix of isomers) | 0.2 |
| Vinyl acetate | 0.15 |
| Methanol | 0.5 |
| Butanol | 0.1 |
| Phenol | 0.003 |
| Toluene | 0.6 |

NOTES:

- Possibility of random inspection of "phenol" indicators is allowed.
- Indicators shall be examined depending on composition of sizing agents being applied.



c. Chemical safety requirements for leather accessories and materials for their manufacturing depending on material composition

| Material | Name of emitted substances | Requirements: air medium (mg/m³), no more than |
|--|---|--|
| Natural materials from vegetative raw materials, natural leather | formaldehyde | 0.003* |
| Polyamide | formaldehyde caprolactam hexamethylenediamine | 0.003* 0.06 0.001 |
| Polyester | formaldehyde dimethyl terephthalate acetaldehyde | 0.003* 0.01 0.01 |
| Polyacrylonitrile | formaldehyde acrylonitrile vinyl acetate | 0.003* 0.03 0.15 |
| Polyurethane | formaldehyde toluene diisocyanate acetaldehyde | 0.003* 0.002 0.01 |
| Polyvinylchloride | formaldehyde phenol dioctylphthalate dibutylphthalate acetone | 0.003* 0.003 0.02 - 0.35 |
| Artificial viscose and acetate | formaldehyde | 0.003* |
| Polyolefin | formaldehyde acetaldehyde | 0.003* 0.01 |
| Vinyl acetates (artificial leather) | formaldehyde vinyl acetate dioctylphthalate dibutylphthalate | 0.003* 0.15 0.02 not allowed |
| Artificial leather with polyurethane or polyvinylurethane covering | formaldehyde dibutylphthalate dioctylphthalate | 0.003* not allowed 0.02 |
| Rubber | formaldehyde dibutylphthalate dioctylphthalate | 0.003* not allowed 0.02 |
| Cardboard | formaldehyde | 0.003* |

NOTES:

* The content of free formaldehyde shall be determined in all kinds of materials and shall be:

- No more than 75 g/g in clothes and materials for clothes of the first layer, inside layers of footwear, house and Each footwear;
- no more than 300 g/g for other products.
- The normative is specified without background air pollution.



5.2 KIDS

a. Chemical safety requirements for **textile materials**

| Materials for product manufacturing | Name of determined substance | Requirement | |
|---|---------------------------------------|---|--|
| | | water medium, (mg/dm ³), no more than | air medium, (mg/m ³), no more than |
| Natural materials from vegetative raw materials | Formaldehyde* | | 0.003 |
| Artificial (viscose and acetate) | Formaldehyde* | | 0.003 |
| Polyester | Formaldehyde* | - | 0.003 |
| | Dimethyl terephthalate | 1.5 | 0.01 |
| | Acetaldehyde | 0.2 | 0.01 |
| Polyamide | Formaldehyde* | | 0.003 |
| | Caprolactam | 0.05 | 0.06 |
| | Hexamethylenediamine | 0.01 | 0.001 |
| Polyacrylonitrile | Formaldehyde* | | 0.003 |
| | Acrylonitrile | 0.02 | 0.03 |
| | Dimethyl formamide | 10 | 0.03 |
| | Vinyl acetate | 0.2 | 0.15 |
| Polyvinylchloride | Formaldehyde | 1.0 | 0.003 |
| | Vinyl chloride | 0.1 | 0.01 |
| | Acetone | 0.01 | 0.35 |
| | Benzene | 0.5 | 0.1 |
| | Toluene | 2.0 | 0.6 |
| | Dibutyl phthalate | not allowed | 0.02 |
| | Dibutyl phthalate** | 0.05 | not allowed |
| | Phenol or the amount of total phenols | 0.1 | 0.003 |
| Vinyl Alcohol | Formaldehyde* | | 0.003 |
| | Vinyl acetate | 0.2 | 0.15 |
| Polyolefine | Formaldehyde* | | 0.003 |
| | Acetaldehyde | 0.2 | 0.01 |

NOTES:

*The aqueous medium - distilled water. Mass fraction of free formaldehyde must comply with the standards provided for each category.

**Only for materials made of natural fibers.

b. Chemical safety requirements for **textile materials and products from them treated with textile-processing chemicals***

| Name of evolving volatile chemical | Requirements: air medium (mg/m ³), no more than |
|------------------------------------|--|
| Xylenes (mixed isomers) | 0.05 |



| Name of evolving volatile chemical | Requirements: air medium (mg/m³), no more than |
|---|--|
| Methylacrylate | 0.02 |
| Methylmethacrylate | 0.25 |
| Styrene | 0.02 |
| Methanol | 0.2 |
| Butanol | 0.5 |
| Phenol or the amount of total phenols | ** |
| Vinyl acetate | ** |
| Acetaldehyde | ** |
| Formaldehyde | ** |

NOTES:

* indicators are examined, depending on the composition of the used coupling agents;

** standards of these indicators must comply with the requirements of Annex 10 of REACH technical regulation.



c. Chemical safety requirements for *leather accessories and materials for their manufacturing depending on material composition*

| Material | Name of emitted substances | Requirements: air medium (mg/m³), no more than |
|--|---|--|
| Natural materials from vegetative raw materials, natural leather | formaldehyde | 0.003* |
| Polyamide | formaldehyde caprolactam hexamethylenediamine | 0.003* 0.06 0.001 |
| Polyester | formaldehyde dimethyl terephthalate acetaldehyde | 0.003* 0.01 0.01 |
| Polyacrylonitrile | formaldehyde acrylonitrile vinyl acetate | 0.003* 0.03 0.15 |
| Polyurethane | formaldehyde toluene diisocyanate acetaldehyde | 0.003* 0.002 0.01 |
| Polyvinylchloride | formaldehyde phenol dioctylphthalate dibutylphthalate acetone | 0.003* 0.003 0.02 not allowed 0.35 |
| Artificial viscose and acetate | formaldehyde | 0.003* |
| Polyolefin | formaldehyde acetaldehyde | 0.003* 0.01 |
| Vinyl acetates (artificial leather) | formaldehyde vinyl acetate dioctylphthalate dibutylphthalate | 0.003* 0.15 0.02 not allowed |
| Artificial leather with polyurethane or polyvinylurethane covering | formaldehyde dibutylphthalate dioctylphthalate | 0.003* not allowed 0.02 |
| Rubber | formaldehyde dibutylphthalate dioctylphthalate | 0.003* not allowed 0.02 |
| Cardboard | formaldehyde | 0.003* |



6. JEWELRY

The limits refer to products for adults and have been selected in order to be according to the most authoritative compulsory regulations. Types of materials taken into consideration: metals, glassware and crystalware, plastic materials, wood and pottery; specific limits are not applicable to natural stones.

The below tables don't deal with textile and leather – which certainly can be involved in jewelry products – since the applicable limits for those materials have already been defined in the previous section of the same document.

a. Metal parts

| Substance | Test Method | Requirement | Law/Country | Notes |
|---------------------|--|--|---|--|
| <i>Total Metals</i> | | | | |
| Cadmium | Acid digestion / AAS / ICP | < 100 mg/kg | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | - |
| | | Prohibited | CNS 15290/Taiwan | - |
| Lead | Acid digestion / AAS / ICP | Total Lead: < 500mg/kg | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | For jewellery articles |
| | Acid digestion / AAS / ICP | Total Lead: 100 mg/kg | Statutory Order no. 856 of September 5, 2009 - Denmark | - |
| | Substrate: CPSC-CH-E1001-08.3 Surface coating: CPSC-CH-E1003-09.1 | Total lead: ≤ 100 mg/kg Painted accessories: ≤ 90 mg/kg | USA CPSIA | Requirements for children |
| | CPSC-CH-E1001-08.3 | Total lead: ≤ 40 mg/kg | USA: (not federal) Illinois "The Lead poisoning Prevention Act" | - |
| <i>Release</i> | | | | |
| Nickel | Nickel release by EN 1811 and EN 12472 | ≤ 0.2 µg/cm ² /week (body piercing) | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | In any post assemblies which are inserted into pierced ears and other pierced part of the human body |
| | | ≤ 0.5 µg/cm ² /week (non-body piercing) | | Abrasion of coated items shall guarantee the same requirement |



| Substance | Test Method | Requirement | Law/Country | Notes |
|---------------------------|--|--|---|---|
| Lead | Migration: EN 16711-3 and EN 12472 | ≤ 0.05 % by weight That limit shall not apply where it can be demonstrated that the rate of lead release , does not exceed $0.05 \mu\text{g}/\text{cm}^2$ per hour (equivalent to $0.05 \mu\text{g}/\text{g}/\text{h}$) , . | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | For articles or accessible parts (smaller than 5 cm in one dimension or has a detachable or protruding part of that size) thereof may, during normal or reasonably foreseeable conditions of use, be placed in the mouth by children. |
| <i>Extractable metals</i> | | | | |
| Antimony | ASTM F 963-17 sec. 4.3.5.2 | ≤ 60 mg/kg | USA "Standard Consumer Safety Specification for Adult Jewelry" (for paint and similar surface coating materials). | For adults (> 14 years old) |
| Arsenic | ASTM F 963-17 sec. 4.3.5.2 | ≤ 25 mg/kg | USA "Standard Consumer Safety Specification for Adult Jewelry" (for paint and similar surface coating materials). | For adults (> 14 years old) |
| Chromium (total) | ASTM F 963-17 sec. 4.3.5.2 | ≤ 60 mg/kg | USA "Standard Consumer Safety Specification for Adult Jewelry" (for paint and similar surface coating materials). | For adults (> 14 years old) |
| Mercury | ASTM F 963-17 sec. 4.3.5.2 | ≤ 60 mg/kg | USA "Standard Consumer Safety Specification for Adult Jewelry" (for paint and similar surface coating materials). | For adults (> 14 years old) |
| Selenium | ASTM F 963-17 sec. 4.3.5.2 | ≤ 500 mg/kg | USA "Standard Consumer Safety Specification for Adult Jewelry" (for paint and similar surface coating materials). | For adults (> 14 years old) |
| Barium | ASTM F 963-17 sec. 4.3.5.2 | ≤ 1000 mg/kg | USA "Standard Consumer Safety Specification for Adult Jewelry" (for paint and similar surface coating materials). | For adults (> 14 years old) |



| Substance | Test Method | Requirement | Law/Country | Notes |
|-----------|-------------------------------|-------------|---|-----------------------------|
| Cadmium | ASTM F 963-17 sec. 4.3.5.2 | ≤ 75 mg/kg | USA "Standard Consumer Safety Specification for Adult Jewelry" (for paint and similar surface coating materials). | For adults (> 14 years old) |

b. Glass and crystal parts

| Substance | Test Method | Requirement | Law/Country | Notes |
|---------------------|---|--|---|--|
| <i>Total Metals</i> | | | | |
| Cadmium | Acid digestion / AAS / ICP | < 100 mg/kg | Netherland: Cadmium decree | - |
| Lead | Acid digestion / AAS / ICP | Total Lead: < 500 mg/kg | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | For jewelry; except for crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Council Directive 69/493/EEC |
| | Acid digestion / AAS / ICP | Total Lead: 100 mg/kg | Statutory Order no. 856 of September 5, 2009 - Denmark | - |
| | Substrate: CPSC-CHE1002-08.1 Surface coating: CPSC-CH-E1003-09.1 | Total lead: ≤ 100 mg/kg Painted accessories: ≤ 90 mg/kg | USA CPSIA | Requirements for children |
| | CPSC-CHE1002-08.1 | Total lead: ≤ 40 mg/kg | USA: (not federal) Illinois "The Lead poisoning Prevention Act" | - |

c. Plastic parts

| Substance | Test Method | Requirement | Law/Country | Notes |
|------------|--------------------|--|---|---------------------------|
| Phthalates | CPSC-CH-C1001-09.4 | DBP, DEHP, BBP, DIBP: ≤ 1000 mg/kg individually or sum DINP, DIDP, DNOP: ≤ 1000 mg/kg the sum | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | Requirements for children |



| Substance | Test Method | Requirement | Law/Country | Notes |
|--|---|--|---|---|
| | CPSC-CH-C1001-09.4 | DIBP, DBP, DPENP, DHEXP, BBP, DEHP, DCHP, DINP, DBP 1000 mg/kg each | USA CPSIA | Requirements for children |
| Total Lead | Acid digestion / AAS / ICP | Total Lead: < 500 mg/kg | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | For jewelry |
| | Acid digestion / AAS / ICP | Total Lead: 100 mg/kg | Statutory Order no. 856 of September 5, 2009 - Denmark | - |
| | Substrate: CPSC-CH-E1001-08.3 /CPSC-CHE1002-08.1 Surface coating: CPSC-CH-E1003-09.1 | Total lead: ≤ 100 mg/kg painted accessories: ≤ 90 mg/kg | USA CPSIA | Requirements for children |
| Total cadmium | EN 1122 | < 100 mg/kg | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | - |
| Polycyclic Aromatic Hydrocarbons (PAH) | AFPS GS 2019:1 | Toys, including activity toys, and childcare articles: 0.5 mg/kg each; Others: 1 mg/kg (each) | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | - |
| Organotin compound | Ref. to UNI CEN ISO/TS 16179 (footwear) | DBT, DOT: ≤1000 mg/kg of Sn each TBT, TPhT: ≤ 1000 mg/kg of Sn the sum | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | - |
| DMF | Solvent extraction and GC-MS analysis | To declare if ≥ 0.1% | European Union REACH Regulation (EC) No. 1907/2006 SVHC | If PU based |
| Formaldehyde | UNI EN ISO 14184-1 | 75 mg/kg | - | Not regulated in European Union REACH Regulation (EC) No. 1907/2006 |
| SCCP | Solvent extraction and GC-MS analysis | 0.15% for article | Regulation (EU) No 2019/1021 (POPs Recast Regulation) and its amendment | - |

d. Wood parts



| Substance | Test Method | Requirement | Law/Country | Notes |
|---------------------|------------------------------|---|---|---|
| Formaldehyde | UNI EN ISO 14184-1 | < 16 mg/kg | - | Not regulated in European Union REACH Regulation (EC) No. 1907/2006 |
| Organotin compound | Solvent extraction/ GC-MS | DBT, DOT: ≤ 1000 mg/kg of Sn each TBT TPHT: ≤ 1000 mg/kg of Sn the sum | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | - |
| <i>Total Metals</i> | | | | |
| Mercury | Acid digestion / ICP/ AAS | < 0.3 mg/kg | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | - |
| Arsenic | Acid digestion / ICP/ AAS | < 3.0 mg/kg | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | - |

e. Ceramic parts

| Substance | Test Method | Requirement | Law/Country | Notes |
|---------------------|---|--|---|--|
| <i>Total Metals</i> | | | | |
| Lead | Acid digestion / AAS / ICP | Total Lead: < 500 mg/kg | European Union REACH Regulation (EC) No. 1907/2006 Annex XVII and its amendment | For jewelry; except for crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Council Directive 69/493/EEC |
| | Substrate: CPSC-CHE1002-08.1 Surface coating: CPSC-CH-E1003-09.1 | Total lead: ≤ 100 mg/kg Painted accessories: ≤ 90 mg/kg | USA CPSIA | Requirements for children |

f. GB 28480

| Substance | Test Method | Requirement | Notes |
|-----------|---------------------------|--------------------------------|---|
| Nickel | GB/T 19719 and GB/T 28485 | < 0.2 µg/cm ² /week | Product for piercing at ear or any other part of human body, or used during healing period of piercing wound |
| | | < 0.5 µg/cm ² /week | Products with long contact to skin, such as: ---- ear rings; ---- necklace, bracelet, hand chain, foot chain, ring; ---- watchcase, watch chain, |



| Substance | Test Method | Requirement | Notes |
|-------------|-------------|--|--|
| | | < 0.5 µg/cm ² /week coating | watch buckle; ---- press button, buckle, rivet, zipper and metal label (if not nailed on to clothing). For coating: within two years of normal usage |
| Arsenic | GB/T 28021 | ≤ 1000 mg/kg | - |
| Chromium VI | GB/T 28019 | ≤ 1000 mg/kg | - |
| Mercury | GB/T 28021 | ≤ 1000 mg/kg | - |
| Lead | GB/T 28021 | ≤ 1000 mg/kg | - |
| Cadmium | GB/T 28021 | ≤ 100 mg/kg | - |

g. ASTM F2923 for Children Jewelry

| Substance | Test Method | Requirement | Notes |
|--|--|--|-------|
| Soluble heavy metal in surface coating | ASTM F2923-20 Sec.8,13.3 / ASTM F963-17 Sec.8.3.2 | All accessible surface coatings in the as received state shall not contain compounds of which the metal content of the soluble material exceeds the levels by weight (mg/kg) of the contained solid including pigments, film solids and driers [Antimony (Sb) 60, Arsenic (As) 25, Barium (Ba) 1000, Cadmium (Cd) 75, Chromium (Cr) 60, Mercury (Hg) 60, Selenium (Se) 500]. | |
| Total cadmium in substrate | ASTM F2923-20 Sec.9 / EPA 3050B (Mod) / EPA 3051A (Mod) / EPA 3052 (Mod) | All accessible plastic and metal substrate materials, before and after use and abuse testing, shall not contain cadmium in excess of 0.030% (300ppm) of the weight of the total content (which is a | |



| Substance | Test Method | Requirement | Notes |
|----------------------------------|---|---|---|
| | | screening limit) or meet the applicable extractable cadmium limit. | |
| Extractable cadmium in plastic | ASTM F2923-20 Sec.9,13.4/ ASTM F963-17 Sect 4.3.5.1(2), 8.3.5 | All accessible plastic component of jewelry, that is a small part, before and after use and abuse testing, or a part (such as a charm/pendant on a necklace or bracelet) which releases during a 15 lb (10 sec) tension test and fits within the small parts cylinder, shall not contain more than 75 mg/kg extractable cadmium. | Materials that contain less than 300 ppm total cadmium do not need to be tested for the extractable content |
| Extractable cadmium in metal | ASTM F2923-20 Sec.9,13.5 / CPSC- CH-E1004-11 | All accessible metal component of jewelry, that is a small part, before and after use and abuse testing, or a part (such as a charm/pendant on a necklace or bracelet) which releases during a 15 lb (10 sec) tension test and fits within the small parts cylinder, shall not contain more than 200 micrograms of cadmium per component. | Materials that contain less than 75 ppm total cadmium do not need to be tested for the extractable content. |
| Extractable cadmium in substrate | ASTM F2923-20 Sec.9 & 14.6 / CPSC SOP for Measuring lead in children's metal jewelry, Feb. 3, 2005 modified | All accessible plastic or metal component of jewelry, that is not a small part, before and after use and abuse testing, or after a 15 lb (10 sec) tension test, but can be mouthed by the child, shall not contain more than 18 micrograms of cadmium per component. | - Materials that contain less than 75 ppm total cadmium do not need to be tested for the extractable content |
| Nickel in metal | ASTM F2923-20 Sec.10 / EN 1811:2011+A1:2015 / EN 12472:2005+A1:2009 | a. Post assemblies for children's jewelry which are inserted into pierced ears and other pierced parts of the human | - Perform full test when the result for nickel spot test is positive or inconclusive. - Following materials are exempted for testing: Precious metals: gold (at least 10 karat); sterling silver (at least 925/1000); platinum; |



| Substance | Test Method | Requirement | Notes |
|--------------------|---|---|--|
| | | body shall not exceed 0.2 µg/cm ² /week. b. All other metal components of children's jewelry intended to come into direct and prolonged contact with the skin shall not exceed 0.5 µg/cm ² /week. | palladium; rhodium; osmium; iridium; ruthenium; titanium; and stainless or surgical steel grades 304, 316 and 430 |
| Phthalates content | ASTM F2923-20 Sec.11 / CPSC-CH-C1001-09.4 (Mod) | Plasticized accessible components of children's jewelry may not contain more than 0.1 % (1000 ppm) of di-(2-ethylhexyl) phthalates (DEHP), dibutyl phthalate (DBP), benzyl butyl phthalate (BBP), diisononyl phthalates (DINP), diisobutyl phthalate (DIBP), di-n-pentyl phthalates (DPENP=DnPP), di-n-hexyl phthalates (DHEXP=DnHP), dicyclohexyl phthalate (DCHP) individually. | Actual testing would be conducted on all accessible plastics materials (including natural and synthetic rubber) (excluding materials listed below), plasticizer print, scrapable surface coatings, decals, polymeric coated materials (unscrapable). Polypropylene (PP), polyethylene (PE), acrylonitrile butadiene styrene (ABS), general purpose polystyrene (GPPS), medium-impact polystyrene (MIPS), high-impact polystyrene (HIPS), and super high-impact polystyrene (SHIPS), and their additives as listed in 16 CFR 1308 are exempt from testing. |

h. ASTM F2999 for Adult Jewelry

| Substance | Test Method | Requirement | Notes |
|---|----------------------------|---|--|
| Lead | ASTM F2999-19, Sec 5, 14.1 | Accessible components of adult jewelry shall meet the lead content limits of Table 1 unless the component is excluded per Table 2. | Where components are made of the same material, only one component is subject to any chemical test references in this standard |
| Antimony, Arsenic, Barium, Cadmium, Chromium, Mercury, and Selenium in Paint and Surface Coatings | ASTM F2999-19, Sec 7, 14.2 | Surface-coating materials applied on or to adult jewelry shall not contain compounds of antimony, arsenic, barium, cadmium, chromium, mercury, or selenium, of which the metal content of the soluble material of these substances is in excess of the levels by weight of the contained solids (including pigments, film solids, and driers) given in Table 4. | |



| Substance | Test Method | Requirement | Notes |
|---|--|---|--|
| Cadmium in Certain Substrate Materials | ASTM F2999-19, Sec 8, 14.1/ 14.3/ 14.4/ 14.5/ 14.7 | <p>Covered components of adult jewelry containing 1.5 % or less total cadmium do not need to be tested for migratable cadmium.</p> <p>Potentially ingestible or swallowable covered components of adult jewelry that exceed this screening level shall be tested for soluble cadmium using an acid extraction test.</p> <p>Swallowable parts shall be identified</p> <p>If a jewelry product or component in one dimension is smaller than 5 cm, it is mouthable.</p> <p><u>Exclusions from Cadmium Substrate Testing Requirements in Adult Jewelry</u></p> | Only accessible metal or plastic/polymeric components are subject to cadmium substrate testing. All other materials are excluded from screening and/or testing. Other materials may be added should data or information regarding potential exposure risks from cadmium in other materials become available. |
| Antimony, Arsenic, Barium, Chromium, Mercury and Selenium in Substrates | ASTM F2999-19, Sec 9 | Report data. | |
| Nickel Exposure in Metal Components | ASTM F2999-19, Sec 10, 14.6 | <p>Representations regarding the safety of adult jewelry for adults sensitive to nickel or the limited potential for nickel to be released from metal components of adult jewelry shall be based on reasonable and representative tests, analyses or compositional assessments suitable for the application.</p> <p>Reasonable and appropriate test methods include, but are not limited to, those identified in 14.6.</p> <p>Precious metals listed in Table 2, and stainless or surgical steel grades 304, 316 or 430, are expected to meet these requirements and do not require testing</p> | |
| Phthalates | ASTM F2999-19, Sec 11 | Report data. | |



TABLE 1 Lead Content Limits for Adult Jewelry

| Materials Covered (Except as Excluded per Table 2) | Maximum Total Lead Limits in Adult Jewelry |
|---|---|
| Electroplated metal with suitable under and finish coats | 6.0% |
| Unplated metal | 1.5% |
| Plastic or rubber, including acrylic, polystyrene, plastic beads and stones, and polyvinyl chloride (PVC) | 200 ppm |
| Materials not otherwise classified | 600 ppm |
| Paint or surface coating | 600 ppm |

TABLE 2 Materials Excluded from Lead Limits in Adult Jewelry

Stainless or surgical steel within the designations of Unified Numbering System UNS S13800 – S66286, not including the stainless steel designated as 303 Pb (UNS S30360), provided that no lead or lead-containing metal is intentionally added

Precious metals: gold; sterling silver (at least 925/1000); platinum; palladium; rhodium; osmium; iridium; ruthenium; titanium

Natural or cultured pearls

Precious gemstones: diamond, ruby, sapphire, emerald

Glass, ceramic, or crystal decorative components, including cat's eye, cubic zirconia, cubic zirconium (CZ), rhinestones, and cloisonné

Semiprecious gemstones and other minerals, provided they are not based on lead or lead compounds, excluding aragonite, bayldonite, boleite, cerussite, crocoite, ekanite, linarite, mimetite, phosgenite, samarskite, vanadinite and wulfenite

Wood, provided it is not treated in any way to add lead

Paper and similar materials made from wood or other cellulosic fiber, including, but not limited to, paperboard, linerboard and medium, and coatings on such paper that soak into the paper and cannot be scraped off the surface

Elastic, fabric, ribbon, rope, or string, unless it contains intentionally added lead

All natural decorative material, including amber, bone, coral, feathers, fur, horn, leather, shell or wood, that is in its natural state and is not treated in a way that adds lead

Adhesive

Repurposed components. Repurposed components are "found" objects that are incorporated into jewelry, and may include, but are not limited to, silver or pewter utensils, bottle caps, buttons.

TABLE 3 Approved Materials for Adult Body-Piercing Jewelry

Surgical implant stainless steel
 Surgical implant grade titanium
 Niobium (Nb)
 Solid 14 karat or higher white or nickel-free gold
 Solid platinum
 A dense, low-porosity plastic, including, but not limited to, Tygon or Polytetrafluoroethylene (PTFE) if the plastic contains no intentionally added lead



TABLE 4 Maximum Soluble Migrated Antimony, Arsenic, Barium, Cadmium, Chromium, Mercury and Selenium from Paint and Surface Coating of Adult Jewelry

| Element | Antimony (Sb) | Arsenic (As) | Barium (Ba) | Cadmium (Cd) | Chromium (Cr) | Mercury (Hg) | Selenium (Se) |
|--|---------------|--------------|-------------|--------------|---------------|--------------|---------------|
| Maximum soluble element (in mg/kg or ppm) in paint or surface coatings of adult jewelry ⁴ | 60 | 25 | 1000 | 75 | 60 | 60 | 500 |

⁴ Due to interlaboratory variability, Specification F2923 and Consumer Safety Specification F963-11 establish the following analytical correction factors (in %): Sb, As and Se: 60%; Hg: 50%; Ba, Cd, and Cr: 30%.

7. PACKAGING MATERIAL

| Substance | Test Method | Requirement |
|----------------------------|--|--|
| Pb, Cd, Hg, Cr (VI) | Acid digestion Pb, Cd, Hg by (ICP-OES) Cr(VI) by (UV-Vis). | 100 mg/kg (sum) |
| PFAS | Total Fluorine Content: EN 14582:2016 If positive, recommend to test individual PFAS* *PFAS: CEN/TS 15968:2010 | Prohibited (Total fluorine: RL = 50 mg/kg) If total fluorine is positive: PFAS: Prohibited (RL: 1mg/kg each) |
| Phthalates | CPSC-CH-C1001-09.4 | 100mg/kg (Sum) |



8. LIST OF RESTRICTED SUBSTANCES

a. Azo dyes & Arylamine salts

| Substance | CAS No. |
|--|------------|
| 4-Amino azobenzene | 60-09-3 |
| o-Aminoazotoluene | 97-56-3 |
| 4-Aminodiphenyl | 92-67-1 |
| 2-Amino-4-nitrotoluene | 99-55-8 |
| o-Anisidine | 90-04-0 |
| Benzidine | 92-87-5 |
| p-Chloroaniline | 106-47-8 |
| 4-Chloro-o-toluidine | 95-69-2 |
| p-Cresidine | 120-71-8 |
| 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'-diamino-diphenylmethane | 838-88-0 |
| 4,4'-Methylene-bis-(2-chloroaniline) | 101-14-4 |
| 2-Naphthylamine | 91-59-8 |
| 4,4'-Oxydianiline | 101-80-4 |
| 4,4'-Thiodianiline | 139-65-1 |
| 2,4-Toluenediamine | 95-80-7 |
| o-Toluidine | 95-53-4 |
| 2,4,5-Trimethylaniline | 137-17-7 |
| 2,4-Xylidine (China, Japan only) | 95-68-1 |
| 2,6-Xylidine (China, Japan only) | 87-62-7 |
| 4-chloro-o-toluidinium chloride | 3165-93-3 |
| 2-Naphthylammoniumacetate | 553-00-4 |
| 4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate | 39156-41-7 |
| 2,4,5-trimethylaniline hydrochloride | 21436-97-5 |

b. Phenols

| Substance | Individual Listings | CAS No. |
|-----------|---|------------------------|
| PCP | Pentachlorophenol (PCP), its salts and compounds | 87-86-5 |
| TeCP | Tetrachlorophenol (TeCP), its salts and compounds 2,3,5,6-TeCP | 25167-83-3 935-95-5 |
| TeCP | Tetrachlorophenol (TeCP), its salts and compounds 2,3,4,6-TeCP | 58-90-2 |



| | | |
|------|---|-----------|
| TeCP | Tetrachlorophenol (TeCP), its salts and compounds 2,3,4,5-TeCP | 4901-51-3 |
|------|---|-----------|

c. Phthalates

| Substance | CAS No. |
|---|--------------------------|
| Di (2-ethylhexyl) phthalate (DEHP) | 117-81-7 |
| Benzyl Butyl phthalate (BBP) | 85-68-7 |
| Dicyclohexyl phthalate (DCHP) | 84-61-7 |
| Di-n-butyl phthalate (DBP) | 84-74-2 |
| Di-n-octyl phthalate (DNOP) | 117-84-0 |
| Di-isononyl phthalate (DINP) | 68515-48-0 28553-12-0 |
| Di-isodecyl phthalate (DIDP) | 68515-49-1 26761-40-0 |
| Dimethyl phthalate (DMP) | 131-11-3 |
| Diethyl phthalate (DEP) | 84-66-2 |
| Diisobutyl phthalate (DIBP) | 84-69-5 |
| 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP) | 68515-42-4 |
| 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) | 71888-89-6 |
| Bis(2-methoxyethyl) phthalate (DMEP) | 117-82-8 |
| Diisopentylphthalate (DIPP) | 605-50-5 |
| N-pentyl-isopentyl phthalate (NPIPP) | 776297-69-9 |
| 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (DPP) | 84777-06-0 |
| Di-n-hexyl phthalate (DnHP/DHP/DHEXP) | 84-75-3 |
| Di- N-pentyl phthalate (DPENP) | 131-18-0 |
| 1,2- Benzenedicarboxylic acid. Dihexyl ester. Branched and linear | 68515-50-4 |
| 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate (EC No. 201-559-5) | 68515-51-5 68648-93-1 |
| Diisohexyl phthalate | 71850-09-4 |

d. Flame Retardants

| Substance | CAS No. |
|-------------------------------------|---|
| Polybrominated biphenyls (PBBs) | 59536-65-1 |
| Heptabromodiphenyl ether (HeptaBDE) | 446255-22-7 207122-16-5, 68928-80-3 |
| Hexabromodiphenyl ether (HexaBDE) | 68631-49-2, 207122-15-4, 36483-60-0 |
| Tetrabromodiphenyl ether (TetraBDE) | 5436-43-1, 40088-47-9 |



| | |
|---|---|
| Hexabromocyclododecane (HBCDD) | 25637-99-4, 3194-55-6, 134237-50-6, 134237-51-7 , 134237-52-8 |
| Penta-bromodiphenyl ether (pentaBDE) | 32534-81-9 |
| Octa-bromodiphenyl ether (octaBDE) | 32536-52-0 |
| Tris (2,3-dibromopropyl) phosphate (TRIS) | 126-72-7 |
| Bis (2,3-dibromopropyl) phosphate | 5412-25-9 |
| Tris (1-aziridiny)-phosphine oxide (TEPA) | 545-55-1 |
| Decabromodiphenyl ether (DecaBDE) | 1163-19-5 |
| Tris(2-chloroethyl) phosphate (TCEP) | 115-96-8 |
| Tris(1,3-dichloro-2-propyl) phosphate (TDCPP) | 13674-87-8 |
| Phosphoric acid, triphenyl ester (TPP) | 115-86-6 |

e. Organotin Compounds

| Substance | CAS No. |
|--------------------------|----------------|
| Tributyltin (TBT) | Various |
| Triphenyltin (TPhT) | Various |
| Dibutyltin (DBT) | Various |
| Diocetyl tin (DOT) | Various |
| Tricyclohexyltin (TcyHT) | Various |
| Trimethyltin (TMT) | Various |
| Triocetyl tin (TOT) | Various |
| Tripropyltin (TPT) | Various |
| Dimethyltin (DMT) | Various |
| Dipropyltin (DPT) | Various |
| Tetrabutyltin (TeBT) | 1461-25-2 |
| Diphenyltin (DPhT) | Various |
| Tetraethyltin (TeET) | 597-64-8 |

f. Pesticides

| Substances | CAS No. |
|--|----------------|
| 2-(2,4,5-trichlorophenoxy) propionic acid, its salts and compounds; 2,4,5-TP | 93-72-1 |
| Azinophosmethyl | 86-50-0 |
| Azinophosethyl | 2642-71-9 |
| Aldrine | 309-00-2 |
| Bromophos-ethyl | 4824-78-6 |
| Carbaryl | 63-25-2 |
| Chlorbenzilat | 510-15-6 |
| Chlordane | 57-74-9 |
| Chlordimeform | 6164-98-3 |
| Chlorthalonil | 1897-45-6 |



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|--|------------|
| Coumaphos | 56-72-4 |
| Cyfluthrin | 68359-37-5 |
| Cyhalothrin | 91465-08-6 |
| Cypermethrin | 52315-07-8 |
| S,S,S-Tributyl phosphorotrithioate (Tribufos) | 78-48-8 |
| Deltamethrin | 52918-63-5 |
| 2,4'-DDD | 53-19-0 |
| 4,4'-DDD | 72-54-8 |
| 2,4'-DDE | 3424-82-6 |
| 4,4'-DDE | 72-55-9 |
| 4,4'-DDT | 50-29-3 |
| 2,4'-DDT | 789-02-6 |
| Diazinon | 333-41-5 |
| Dichlofluanide | 1085-98-9 |
| Dicofol | 115-32-2 |
| Dicrotophos | 141-66-2 |
| Dieldrine | 60-57-1 |
| Dimethoate | 60-51-5 |
| DTTB (4, 6-Dichloro-7 (2,4,5-trichlorophenoxy)-2-Trifluoro methyl benzimidazole) | 63405-99-2 |
| Endosulfan | 115-29-7 |
| α-Endosulfan | 959-98-8 |
| β-Endosulfan | 33213-65-9 |
| Endrine | 72-20-8 |
| Esfenvalerat | 66230-04-4 |
| Ethylendibromid | 106-93-4 |
| Fenvalerate | 51630-58-1 |
| Halogenated naphthalenes, including polychlorinated naphthalenes (PCNs) | Various |
| Heptachlor | 76-44-8 |
| Heptachlorepoxyde | 1024-57-3 |
| Isodrine | 465-73-6 |
| Kelevane | 4234-79-1 |
| Kepone | 143-50-0 |
| Hexachlorobenzene | 118-74-1 |
| α-Hexachlorcyclohexane | 319-84-6 |
| β-Hexachlorcyclohexane | 319-85-7 |
| δ-Hexachlorcyclohexane | 319-86-8 |
| Lindane | 58-89-9 |
| Malathion | 121-75-5 |
| Metamidophos | 10265-92-6 |
| Methoxychlor | 72-43-5 |
| Mirex | 2385-85-5 |
| Monocrotophos | 6923-22-4 |
| Ethylparathione, Parathion | 56-38-2 |
| Parathion-methyl | 298-00-0 |
| Pentachloroanisole | 1825-21-4 |
| Propethamphos | 31218-83-4 |
| Profenophos | 41198-08-7 |
| Quinalphos | 13593-03-8 |
| Quintozene | 82-68-8 |
| Toxaphen (Camphechlor) | 8001-35-2 |
| Tolyfluanide | 731-27-1 |
| Trifluralin | 1582-09-8 |
| 2,4,5-T | 93-76-5 |



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|---------------------------------------|------------|
| 2,4-D | 94-75-7 |
| Captafol | 2425-06-1 |
| Chlorfenvinphos | 470-90-6 |
| Dichlorprop | 120-36-5 |
| Dinoseb, its salts and acetate | 88-85-7 |
| MCPA | 94-74-6 |
| MCPB | 94-81-5 |
| Phosdrin / Mevinphos | 7786-34-7 |
| Perthane | 72-56-0 |
| Strobane | 8001-50-1 |
| Telodrine | 297-78-9 |
| 2-Octylisothiazol-3(2H)-on | 26530-20-1 |
| 2-Phenylphenol | 90-43-7 |
| 2-(Thiocyanomethylthio)-Benzothiazole | 21564-17-0 |
| Triclosan | 3380-34-5 |
| 4-Chlor-3-Methylphenol (CMK) | 59-50-7 |

g. Asbestos

| Substance | CAS No. |
|------------------|----------------|
| Actinolite | 77536-66-4 |
| Amosite | 12172-73-5 |
| Anthrophyllite | 77536-67-5 |
| Chrysotile | 12001-29-5 |
| Crocidolite | 12001-28-4 |
| Tremolite | 77536-68-6 |

h. Metals

| Substance | CAS No. |
|-----------------------------|----------------|
| Cadmium (Cd) | 7440-43-9 |
| Lead (Pb) | 7439-92-1 |
| Chromium | 7440-47-3 |
| Mercury | 7439-97-6 |
| Arsenic | 7440-38-2 |
| Copper | 7440-50-8 |
| Nickel (Ni) | 7440-02-0 |
| Antimony | 7440-36-0 |
| Cobalt | 7440-48-4 |
| Chromium (Cr VI) hexavalent | 18540-29-9 |
| Tin (Sn) | 7440-31-5 |
| Manganese (Mn) | 7439-96-5 |
| Zinc (Zn) | 7440-66-6 |

i. Polycyclic Aromatic Hydrocarbons (PAHs)



| Substance | CAS No. |
|------------------------|----------------|
| Benzo(a)anthracene | 56-55-3 |
| Chrysene | 218-01-9 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 |
| Benzo(b)fluoranthene | 205-99-2 |
| Benzo(k)fluoranthene | 207-08-9 |
| Benzo(a)pyrene | 50-32-8 |
| Dibenzo(a,h)anthracene | 53-70-3 |
| Benzo(g,h,i)perylene | 191-24-2 |
| Benzo(l)pyrene | 192-97-2 |
| Benzo(j)fluoranthene | 205-82-3 |
| Acenaphthene | 83-32-9 |
| Acenaphthylene | 208-96-8 |
| Anthracene | 120-12-7 |
| Fluoranthene | 206-44-0 |
| Fluorene | 86-73-7 |
| Naphthalene | 91-20-3 |
| Phenanthrene | 85-01-8 |
| Pyrene | 129-00-0 |

j. Misc

| Substance | CAS No. |
|---|--|
| Formaldehyde | 50-00-0 |
| Perfluorooctane sulfonate (PFOS) | 2795-39-3 |
| Perfluorooctanoic acid (PFOA), its salts and esters | 335-67-1, 3825-26-1 335-95-5 2395-00-8 335-66-0 376-27-2 3108-24-5 |
| Blue Colorant | 118685-33-9 |
| Nonyl phenol(NP) | Various |
| Nonyl phenoethoxylates(NPEO) | Various |
| Octylphenol (OP) | Various |
| Octylphenol ethoxylate (OPEO) | Various |
| Heptylphenol | Various |
| Pentylphenol | Various |
| pH value | - |
| Vinyl Chloride Monomer (VCM) | 75-01-4 |



k. Others

| Substance | CAS No. |
|--|------------------------|
| 2-benzyl-2-dimethylamin-4'-morpholinobutyrophenone | 119313-12-1 |
| 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one | 71868-10-5 |
| Perfluorobutane sulfonic acid (PFBS) and its salts | 375-73-5 59933-66-3 |
| 1,2-Dichloroethane | 107-06-2 |
| trans-1,2- Dichloroethylene | 156-60-5 |
| o-Dichlorobenzene | 95-50-1 |
| 1,2-Dichloropropane | 78-87-5 |
| ,4'-(1-Methylethylidene)bis[2, 6-dibromophenol] (TBBPA) | 40039-93-8 |
| 1,3-Butadiene | 106-99-0 |
| 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB) | 1222-05-5 |
| Phthalic anhydride | 85-44-9 |
| 1-vinylimidazole | 1072-63-5 |
| 2-methylimidazole | 693-98-1 |
| Butyl 4-hydroxybenzoate (Butylparaben) | 94-26-8 |

l. Carcinogenic Dyes and Allergenic Disperse Dyes

| Substance | CAS No. |
|--------------------------|----------------|
| Disperse Blue 1 | 2475-45-8 |
| Disperse Blue 3 | 2475-46-9 |
| Disperse Blue 7 | 3179-90-6 |
| Disperse Blue 26 | 3860-63-7 |
| Disperse Blue 35 | 12222-75-2 |
| Disperse Blue 102 | 12222-97-8 |
| Disperse Blue 106 | 12223-01-7 |
| Disperse Blue 124 | 61951-51-7 |
| Disperse Orange 1 | 2581-69-3 |
| Disperse Orange 3 | 730-40-5 |
| Disperse Orange 11 | 82-28-0 |
| Disperse Orange 37/59/76 | 13301-61-6 |
| Disperse Orange 149 | 85316-74-9 |
| Disperse Red 1 | 2872-52-8 |
| Disperse Red 11 | 2872-48-2 |
| Disperse Red 17 | 3179-89-3 |
| Disperse Red 151 | 61968-47-6 |
| Disperse Yellow 1 | 119-15-3 |



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|--------------------|-------------------------------------|
| Disperse Yellow 3 | 2832-40-8 |
| Disperse Yellow 7 | 6300-37-4 |
| Disperse Yellow 9 | 6373-73-5 |
| Disperse Yellow 23 | 6250-23-3 |
| Disperse Yellow 39 | 12236-29-2 |
| Disperse Yellow 49 | 54824-37-2 |
| Disperse Yellow 56 | 54077-16-6 |
| Disperse Brown 1 | 23355-64-8 |
| Acid Red 26 | 3761-53-3 |
| Acid Violet 49 | 1694-09-3 |
| Basic Red 9 | 569-61-9 |
| Basic Violet 1 | 8004-87-3 |
| Basic Violet 3 | 548-62-9 |
| Basic Violet 14 | 632-99-5 |
| Basic Blue 26 | 2580-56-5 |
| Basic Green 4 | 569-64-2 2437-29-8 10309-95-2 |
| Direct Blue 6 | 2602-46-2 |
| Direct Brown 95 | 16071-86-6 |
| Direct Black 38 | 1937-37-7 |
| Direct Red 28 | 573-58-0 |
| Solvent Blue 4 | 6786-83-0 |
| Solvent Violet 8 | 561-41-1 |
| Solvent Yellow 2 | 60-11-7 |
| Solvent Yellow 14 | 842-07-9 |
| Blue Colorant | Various |

m. Chlorinated toluenes and Chlorinated benzenes

| Substance | CAS No. |
|--|----------------|
| $\alpha,\alpha,\alpha,4$ -tetrachlorotoluene | 5216-25-1 |
| α,α,α -trichlorotoluene | 98-07-7 |
| α -chlorotoluene | 100-44-7 |
| Pentachlorobenzene | 608-93-5 |
| Hexachlorobenzene | 118-74-1 |
| Polychlorinated naphthalenes | 70776-03-3 |

n. Volatile Organic Compounds (VOCs)



| Substance | CAS No. |
|---------------------|-----------|
| 1,2-Dichloroethane | 107-06-2 |
| 2-Phenyl-2-Propanol | 617-94-7 |
| Ethyl benzene | 100-41-4 |
| Acetophenone | 98-86-2 |
| Benzene | 71-43-2 |
| Styrene | 100-42-5 |
| Formamide | 75-12-7 |
| Cyclohexanone | 108-94-1 |
| 2-Butanone (MEK) | 78-93-3 |
| Phenol | 108-95-2 |
| Tetrachloroethylene | 127-18-4 |
| Toluene | 108-88-3 |
| Trichloroethylene | 79-01-6 |
| Xylene | 1330-20-7 |

o. Per- and polyfluoroalkyl substances (PFAS)

PFOS and Related Substances

| Substances | CAS No. |
|--|-------------|
| Perfluorooctanesulfonic acid (PFOS) | 1763-23-1 |
| Perfluorooctanesulfonic acid, potassium salt (PFOS-K) | 2795-39-3 |
| Perfluorooctanesulfonic acid, lithium salt (PFOS-Li) | 29457-72-5 |
| Perfluorooctanesulfonic acid, sodium salt (PFOS-Na) | 4021-47-0 |
| Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH ₄) | 29081-56-9 |
| Perfluorooctane sulfonate diethanolamine salt (PFOS-NH ₂ (C ₂ H ₄ OH) ₂) | 70225-14-8 |
| Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-N(C ₂ H ₅) ₄) | 56773-42-3 |
| N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA) | 4151-50-2 |
| N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA) | 31506-32-8 |
| 2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSE) | 1691-99-2 |
| 2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE) | 24448-09-7 |
| Perfluoro-1-octanesulfonyl fluoride (POSF) | 307-35-7 |
| Perfluorooctane sulfonamide (PFOSA) | 754-91-6 |
| Didecyldimethylammonium perfluorooctane sulfonate (PFOS-N(C ₁₀ H ₂₁) ₂ (CH ₃) ₂) | 251099-16-8 |

PFOA and Its Salts

| Substances | CAS No. |
|------------|---------|
|------------|---------|



| | |
|--|-----------|
| Perfluorooctanoic acid (PFOA) | 335-67-1 |
| Sodium perfluorooctanoate (PFOA-Na) | 335-95-5 |
| Potassium perfluorooctanoate (PFOA-K) | 2395-00-8 |
| Silver perfluorooctanoate (PFOA-Ag) | 335-93-3 |
| Perfluorooctanoyl fluoride (PFOA-F) | 335-66-0 |
| Ammonium pentadecafluorooctanoate (APFO) | 3825-26-1 |

PFOA-related Substances

| Substances | CAS No. |
|---|-------------|
| 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS) | 39108-34-4 |
| Methyl perfluorooctanoate (Me-PFOA) | 376-27-2 |
| Ethyl perfluorooctanoate (Et-PFOA) | 3108-24-5 |
| 2-Perfluorooctylethanol (8:2 FTOH) | 678-39-7 |
| 1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA) | 27905-45-9 |
| 1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA) | 1996-88-9 |
| Perfluorooctane iodide (PFOI) | 507-63-1 |
| 2H,2H Perfluorodecane Acid (H ₂ PFDA / 8:2 FTCA) | 27854-31-5 |
| Tetrabutylphosphonium 2H,2H-Perfluorodecanoate (8:2 FTCA-P(C ₄ H ₉) ₄) | 882489-14-7 |

C9-C14 Perfluorocarboxylic acids (PFCA) and its salts

| Substances | CAS No. |
|---|-------------|
| Perfluorononane Acid (PFNA) | 375-95-1 |
| Sodium Perfluorononanoate (PFNA-Na) | 21049-39-8 |
| Ammonium Perfluorononanoate (PFNA-NH ₄) | 4149-60-4 |
| Perfluoro-3,7-dimethyloctanoic Acid (PF-3,7-DMOA) | 172155-07-6 |
| Perfluorodecane Acid (PFDA) | 335-76-2 |
| Sodium Perfluorodecanoate (PFDA-Na) | 3830-45-3 |
| Ammonium Perfluorodecanoate (PFDA-NH ₄) | 3108-42-7 |
| Perfluoroundecanoic Acid (PFUnA) | 2058-94-8 |
| Perfluorododecanoic Acid (PFDoA) | 307-55-1 |
| Ammonium Perfluorododecanoate (PFDoDA-NH ₄) | 3793-74-6 |
| Perfluorotridecanoic Acid (PFTrDA) | 72629-94-8 |
| Perfluorotetradecanoic Acid (PFTeDA) | 376-06-7 |

C9-C14 Perfluorocarboxylic acids (PFCA) related substances

| Substances | CAS No. |
|--|-----------|
| Perfluorodecane sulfonic acid (PFDSA) | 335-77-3 |
| Sodium Perfluorodecanesulfonate (PFDS-Na) | 2806-15-7 |
| ;Potassium Perfluorodecanesulfonate (PFDS-K) | 2806-16-8 |



| | |
|---|-------------|
| Ammonium Perfluorodecanesulfonate (PFDS-NH ₄) | 67906-42-7 |
| 1H,1H,2H,2H-Perfluoro-1-dodecaol (10:2 FTOH) | 865-86-1 |
| 1H,1H,2H,2H-Perfluorododecylacrylate (10:2 FTA) | 17741-60-5 |
| 1-Iodo-1H,1H,2H,2H-perfluorodecane (8:2 FTI) | 2043-53-0 |
| 1H,1H,2H,2H-Perfluorodecyltriethoxysilane (8:2 FTSi(OC ₂ H ₅) ₃) | 101947-16-4 |
| 2H,2H,3H,3H-Perfluoroundecanoic Acid (H ₄ PFUnDA / 8:3 FTCA) | 34598-33-9 |
| 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS) | 39108-34-4 |
| 1H,1H,2H,2H-Perfluorodecan-1-ol (8:2 FTOH) | 678-39-7 |
| 1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA) | 27905-45-9 |
| 1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA) | 1996-88-9 |
| 2H,2H Perfluorodecane Acid (H ₂ PFDA / 8:2 FTCA) | 27854-31-5 |
| Tetrabutylphosphonium 2H,2H-Perfluorodecanoate (8:2 FTCA-P(C ₄ H ₉) ₄) | 882489-14-7 |
| 1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMA) | 2144-54-9 |
| H,1H,2H,2H-perfluorotetradecan-1-ol (12:2 FTOH) | 39239-77-5 |
| 1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2 FTS) | 120226-60-0 |
| 1H,1H,2H,2H-Perfluorododecyl iodide (10:2 FTI) | 2043-54-1 |
| 1H,1H,2H,2H-Perfluorotetradecyl iodide (12:2 FTI) | 30046-31-2 |

PFHxS and its salts

| Substances | CAS No. |
|---|------------|
| Perfluorohexanesulfonic acid (PFHxS) | 355-46-4 |
| Perfluorohexanesulfonic acid, sodium salt (PFHxS-Na) | 82382-12-5 |
| Perfluorohexanesulfonic acid, potassium salt (PFHxS-K) | 3871-99-6 |
| Perfluorohexane Sulfonic acid, lithium salt (PFHxS-Li) | 55120-77-9 |
| Perfluorohexane Sulfonic acid, ammonium salt (PFHxS-NH ₄) | 68259-08-5 |

PFHxS-related Substances

| Substances | CAS No. |
|---|------------|
| 1-Hexanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-N-methyl- (N-Me-FHxSA) | 68259-15-4 |
| 1-Hexanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro- (PFHxSA) | 41997-13-1 |

FTOH

| Substances | CAS No. |
|------------|---------|
|------------|---------|



| | |
|---|------------|
| 1H,1H,2H,2H-Perfluoro-1-hexanol (4:2 FTOH) | 2043-47-2 |
| 1H,1H,2H,2H-Perfluoro-1-octanol (6:2 FTOH) | 647-42-7 |
| 2-Perfluorooctylethanol (8:2 FTOH) | 678-39-7 |
| 1H,1H,2H,2H-Perfluoro-1-dodecaol (10:2 FTOH) | 865-86-1 |
| H,1H,2H,2H-perfluorotetradecan-1-ol (12:2 FTOH) | 39239-77-5 |