



January 2021

REACH and Samsung Electronics' Products

Regulation No 1907/2006 on the *Registration, Evaluation, Authorisation and Restriction of Chemicals* (REACH)¹ entered into force on 1st June 2007. Under REACH, companies operating in the EU face certain obligations as manufacturers, importers and/or downstream users. One of the key requirements is the *Duty to Communicate Information on Substances in Articles* (Article 33).

Article 33: Information for Recipients & Customers

Article 33 of REACH requires suppliers to inform recipients and respond to consumer enquiries if an article contains more than 0.1% (by weight per article) of any substance on the SVHC candidate list² published by the European Chemicals Agency (ECHA).

Samsung Electronics Co. Ltd (SEC) provides Article 33 information as follows. In addition, all consumers can use the contacts below to submit queries relating to the REACH obligations in Samsung Electronics' products.

With kind regards,

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¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:396:0001:0849:EN:PDF>

² SVHC = Substances of Very High Concern. Considered as candidates for inclusion in Annex XIV of REACH. The latest revision to the candidate list was published by the European Chemicals Agency on 19th January 2021 at: <https://echa.europa.eu/candidate-list-table>

The majority of products and packaging as manufactured and/or supplied by Samsung Electronics Co. Ltd (SEC) do not contain substances on the REACH SVHC candidate list in concentrations greater than 0.1% by weight per article³. The limited numbers of articles affected are listed below. This is the status as of January 2021.

| Substance | EC No. | CAS No | Individual articles affected | Application |
|--|----------------------|------------------------|--|---|
| Benzene-1,2,4-tricarboxylic acid 1,2 anhydride(trimellitic anhydride; TMA) | 209-008-0 | 552-30-7 | Ceramic and epoxy in Samsung Electronics products may potentially contain Benzene-1,2,4-tricarboxylic acid 1,2 anhydride(trimellitic anhydride; TMA) above 0.1% by weight. | Component of ceramic, polymerization reaction |
| Boric acid, Boric acid crude natual | 233-139-2, 234-343-4 | 10043-35-3, 11113-50-1 | Plastic and ceramic in Samsung Electronics products may potentially contain Boric acid above 0.1% by weight. | PVA crosslinking agent, impurity |
| Calcium arsenate | 231-904-5 | 7778-44-1 | Light emitting diode in Samsung Electronics products may potentially contain Calcium arsenate above 0.1% by weight. | Component |
| Cadmium | 231-152-8 | 7440-43-9 | Copper alloy in Samsung Electronics products may potentially contain Cadmium above 0.1% by weight. | Addictive or impurity of copper alloys |
| Cadmium oxide | 215-146-2 | 1306-19-0 | Ceramic, Glass and metal alloy in Samsung Electronics products may potentially contain Cadmium oxide above 0.1% by weight. | Component |
| Cyclohexane-1,2-dicarboxylic anhydride | 201-604-9 | 85-42-7 | Light emitting diode in Samsung Electronics products may potentially contain Cyclohexane-1,2-dicarboxylic anhydride above 0.1% by weight. | Component |
| Octamethyl cyclotetrasiloxane(D4) | 209-136-7 | 556-67-2 | Plastic and silicon in Samsung Electronics products may potentially contain Octamethyl cyclotetra siloxane(D4) above 0.1% by weight. | Addictive, impurity, component |
| Decamethyl cyclopentasiloxane(D5) | 208-764-9 | 541-02-6 | Plastic and silicon Samsung Electronics products may potentially contain Decamethyl cyclopenta siloxane(D5) above 0.1% by weight. | Addictive, impurity, component |

³ Reference: ECHA Guidance on requirements for substances in Articles.

| Substance | EC No. | CAS No | Individual articles affected | Application |
|--|-----------|------------|--|---|
| Dodecamethyl cyclohexasiloxane(D6) | 208-762-8 | 540-97-6 | Plastic and silicon in Samsung Electronics products may potentially contain Dodecamethyl cyclohexasiloxane(D6) above 0.1% by weight. | Addictive, impurity, component |
| Diboron trioxide | 215-125-8 | 1303-86-2 | Resistor in Samsung Electronics products may potentially contain Diboron trioxide above 0.1% by weight. | Component of glass, ceramic and metal alloy |
| Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (ADCA) | 204-650-8 | 123-77-3 | Plastic and epoxy in Samsung Medical Devices may potentially contain ADCA above 0.1% by weight. | Blowing agent(Cushion), component |
| N,N-dimethylformamide | 200-679-5 | 68-12-2 | Plastic and epoxy in Samsung Electronics products may potentially contain N,N-dimethylformamide above 0.1% by weight. | Thermoplastic, additive |
| N,N-dimethylacetamide | 204-826-4 | 127-19-5 | Samsung Electronics products may potentially contain N,N-dimethylacetamide above 0.1% by weight. | Impurity |
| Ethylenediamine (EDA) | 203-468-6 | 107-15-3 | Metal alloy in Samsung Electronics products may potentially contain Ethylenediamine (EDA) above 0.1% by weight. | Plating, stabilizer, component |
| Lead | 231-100-4 | 7439-92-1 | Metal alloy, ceramic, glass and solder in Samsung Electronics products may potentially contain Lead above 0.1% by weight. | Component, impurity |
| Lead monoxide (Lead oxide) | 215-267-0 | 1317-36-8 | Ceramic and glass in Samsung Electronics products may potentially contain Lead monoxide above 0.1% by weight. | Component, additive |
| Lead titanium trioxide | 235-038-9 | 12060-00-3 | Ceramic and glass in Samsung Electronics products may potentially contain Lead titanium trioxide above 0.1% by weight. | Component |
| Lead titanium zirconium oxide | 235-727-4 | 12626-81-2 | Ceramic in Samsung Electronics products may potentially contain Lead titanium zirconium oxide above 0.1% by weight. | Main component |
| Orange lead (Lead tetroxide) | 215-235-6 | 1314-41-3 | Ceramic in Samsung Electronics products may potentially contain Orange lead above 0.1% by weight. | Component |

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|---|-----------|-------------|---|--|
| Hexahydromethylphthalic anhydride | 247-094-1 | 25550-51-0 | Epoxy and metal in Samsung Electronics products may potentially contain Hexahydromethylphthalic anhydride above 0.1% by weight. | Component, polymerization |
| 1-methyl-2-pyrrolidone (NMP) | 212-828-1 | 872-50-4 | TFT and epoxy in Samsung Electronics products may potentially contain 1-Methyl-2-pyrrolidone (NMP) above 0.1% by weight. | TFT stripping process, impurity, solvent |
| 1-vinylimidazole | 214-012-0 | 1072-63-5 | Plastics in Samsung Electronics products may potentially contain 1-vinylimidazole above 0.1% by weight. | Plasticizer |
| 1, 2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) | 203-794-9 | 110-71-4 | Samsung Electronics products may potentially contain 1, 2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) above 0.1% by weight. | Solvent, component |
| 1,3-propanesultone | 214-317-9 | 1120-71-4 | Battery in Samsung Electronics products may potentially contain 1,3-propanesultone above 0.1% by weight. | Battery electrolyte |
| 1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC) | 219-514-3 | 2451-62-9 | Resin and ink in Samsung Electronics products may potentially contain 1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC) above 0.1% by weight. | Curing agent, component of ink, component |
| 1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene | 236-948-9 | 13560-89-9 | Resin in Samsung Electronics products may potentially contain 1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene above 0.1% by weight. | Component |
| 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone | 404-360-3 | 119313-12-1 | Epoxy resin and ink in Samsung Electronics products may potentially contain 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone above 0.1% by weight. | Photo initiator |
| 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one | 400-600-6 | 71868-10-5 | Epoxy resin and ink in Samsung Electronics products may potentially contain 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one above 0.1% by weight. | Photo initiator, hardener, crosslinking agent, component |
| 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) | 247-384-8 | 25973-55-1 | Plastic in Samsung Electronics products may potentially contain 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) above 0.1% by weight. | Preventing UV, polarizer, crosslinking agent, component |

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| 2-ethoxyethyl acetate | 203-839-2 | 111-15-9 | Ink in Samsung Electronics products may potentially contain 2-ethoxyethyl acetate above 0.1% by weight. | Solvent, component |
| 2-methylimidazole | 211-765-7 | 693-98-1 | Epoxy resin in Samsung Electronics products may potentially contain 2-methylimidazole above 0.1% by weight. | Molding compounds |
| 4-Nonylphenol, branched, ethoxylated | 500-315-8 | 127087-87-0 | Adhesive in Samsung Electronics products may potentially contain 4-Nonylphenol, branched, ethoxylated above 0.1% by weight. | Component |
| Nonylphenol, ethoxylated | 500-024-6 | 9016-45-9 | Resin and flux in Samsung Electronics products may potentially contain Nonylphenol, ethoxylated above 0.1% by weight. | Component |
| 4,4'-isopropylidenediphenol (Bisphenol A; BPA) | 201-245-8 | 80-05-07 | Plastic in Samsung Electronics products may potentially contain 4,4'-isopropylidenediphenol (Bisphenol A; BPA) above 0.1% by weight. | Impurity, byproduct, component |
| Imidazolidine-2-thione (2-imidazoline-2-thiol) | 202-506-9 | 96-54-7 | Resin and rubber in Samsung Electronics products may potentially contain Imidazolidine-2-thione above 0.1% by weight. | Component |
| Pitch, coal tar, high temp. | 266-028-2 | 65996-93-2 | Ink in Samsung Electronics products may potentially contain Pitch, coal tar, high temp. above 0.1% by weight. | Component |
| Pyrochlore, antimony lead yellow This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77588. | 232-382-1 | 8012-00-8 | Resin in Samsung Electronics products may potentially contain Pyrochlore, antimony lead yellow | Component |
| Tetralead trioxide sulphate | 235-380-9 | 12202-17-4 | Ceramic in Samsung Electronics products may potentially contain Tetralead trioxide sulphate above 0.1% by weight. | Component |
| Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with \geq 0.1% w/w of 4-nonylphenol, branched and linear (4-NP) | - | - | Resin in Samsung Electronics products may potentially contain Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with \geq 0.1% w/w of 4-nonylphenol, branched and linear (4-NP) above 0.1% by weight. | Cable, sensor |

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| Trixylyl phosphate | 246-677-8 | 25155-23-1 | Resins in Samsung Electronics products may potentially contain Trixylyl phosphate above 0.1% by weight. | Flame retardant, component |
| Benzo[ghi]perylene | 205-883-8 | 191-24-2 | Ink in Samsung Electronics products may potentially contain Benzo[ghi]perylene above 0.1% by weight. | Addictive |
| Bis(2-(2-methoxyethoxy)ethyl)ether | 205-594- | 143-24-8 | Resin and ink in Samsung Electronics products may potentially contain Bis(2-(2-methoxyethoxy)ethyl)ether above 0.1% by weight. | Component, impurity |
| Diocetyl tin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety | 222-883-3, 293-901-5 | 3648-18-8, 91648-39-4 | Resin in Samsung Electronics products may potentially contain Diocetyl tin dilaurate above 0.1% by weight. | Plasticizer, addictive, impurity |