

CONTENT OF HAZARDOUS SUBSTANCES IN TOMAGO ALUMINIUM PRODUCTS

Products supplied from Tomago Aluminium Cast Products department do not have any deliberate addition of Antimony (Sb), Arsenic (As), Beryllium (Be), Cadmium (Cd), Lead (Pb) or Mercury (Hg).

There are trace amounts of these elements in product produced at Tomago Aluminium, and these are the consequence of the raw materials and process in the smelting operation.

Typical contents of these elements are as follows:

Antimony (Sb):	<0.0010%	(<10 ppm)
Arsenic (As):	<0.0004%	(<4 ppm)
Beryllium (Be):	<0.00005%	(<0.5 ppm)
Cadmium (Cd):	<0.00014%	(<1.4 ppm)
Lead (Pb):	0.0008%	(8 ppm)
Mercury (Hg)	<0.00003%	(<0.3 ppm)

Tomago systematically analyses for Cd, Be and Pb using Optical Emission Spectroscopy. As, Hg and Sb measurements are performed on an audit basis using Glow Discharge Mass Spectroscopy.

No additions of radioactive materials are made at Tomago.

None of the hazardous substances listed below are intentionally added to Tomago products:

[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
[Phthalato(2-)]dioxotrilead
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,2,3-trichloropropane
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)

1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters
1,2-Benzenedicarboxylic acid, dihexylester, branched and linear
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear
1,2-bis(2-methoxyethoxy)ethane (TEGDME, triglyme)
1,2-Dichloroethane
1,2-Dichloroethane (EDC)
1,2-Diethoxyethane
1,2-dimethoxyethane, ethylene glycol dimethyl ether (EGDME)
1,2,5,6,9,10-hexabromocyclodecane
1,3-propanesultone
1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)
1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β -TGIC)
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 ("Dechlorane Plus"™) covering any of its individual anti- and syn- isomers or any combination thereof
1-bromopropane (n-propyl bromide)
1-Methyl-2-pyrrolidone (NMP)
2-(2-butoxyethoxy) ethanol
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)
2-(2-methoxyethoxy) ethanol
2,2'-dichloro-4,4'-methylenedianiline
2,2'-dichloro-4,4'-methylenedianiline (MOCA)
2,4 – Dinitrotoluene (2,4-DNT)
2,4-Dinitrotoluene
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)
2-Ethoxyethanol
2-Ethoxyethyl acetate
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)
2-Methoxyaniline, o-Anisidine
2-Methoxyethanol
2-Naphthylamine
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine
4-(1,1,3,3-tetramethylbutyl)phenol
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]
4-heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]
4,4'- Diaminodiphenylmethane (MDA)
4,4'Diaminodiphenylmethane

4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
4,4'-bis(dimethylamino)benzophenone (Michler's ketone)
4,4'-isopropylidenediphenol (bisphenol A; BPA)
4,4'-methylenedi-o-toluidine
4,4'-oxydianiline and its salts
4-Aminoazobenzene
4-methyl-m-phenylenediamine (toluene-2,4-diamine)
4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]
4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]
5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]
5-tert-butyl-2,4,6-trinitro-m-xylene (Musk xylene)
6-methoxy-m-toluidine (p-cresidine)
Acetic acid, lead salt, basic
Acids generated from chromium trioxide and their oligomers. Names of the acids and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid.
Acrylamide
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)
Alpha-hexabromocyclododecane
Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (μm) c) alkaline oxide and alkali earth oxide ($\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}+\text{MgO}+\text{BaO}$) content less or equal to 18% by weight
Ammonium dichromate
Ammonium nitrate
Ammonium nonadecafluorodecanoate
Ammonium pentadecafluorooctanoate (APFO)
Ammonium salts of perfluorononan-1-oic acid
Anthracene
Anthracene oil
Anthracene oil, anthracene paste
Anthracene oil, anthracene paste, anthracene fraction
Anthracene oil, anthracene paste, distn. lights
Anthracene oil, anthracene-low
Arsenic acid

Asbestos
Azo dye and pigments forming specified amines
Benz[a]anthracene
Benzenamine, N-phenyl-, Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)
Benzene-1,2,4-tricarboxylic acid 1,2 anhydride
Benzo[def]chrysene(Benzo[a]pyrene)
Benzo[ghi]perylene
Benzotriazole
Benzyl butyl phthalate (BBP)
Beryllium oxide
Beta-hexabromocyclododecane
Biphenyl-4-ylamine
Bis (2-ethylhexyl)phthalate (DEHP)
Bis(2-methoxyethyl) ether
Bis(2-methoxyethyl) ether (Diglyme)
Bis(2-methoxyethyl) phthalate
Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE)
Bis(tributyltin) oxide (TBTO)
Boric acid
Cadmium
Cadmium carbonate
Cadmium chloride
Cadmium fluoride
Cadmium hydroxide
Cadmium nitrate
Cadmium oxide
Cadmium sulphate
Cadmium sulphide
Calcium arsenate
Chloroalkanes C10-13
Chloroform
Chromic acid
Chromium trioxide
Chrysene
Cobalt dichloride
Cobalt(II) carbonate
Cobalt(II) diacetate
Cobalt(II) dinitrate
Cobalt(II) sulphate
Cyclohexane

Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry]
Decanoic acid, nonadecafluoro-,sodium salt
Deca bromo diphenylether
Decamethylcyclopentasiloxane
Di(2-ethylhexyl) phthalate (DEHP)
Diarsenic pentaoxide
Diarsenic pentaoxide; Arsenic pentaoxide; Arsenic oxide
Diarsenic trioxide
Diarsenic trioxide; Arsenic trioxide
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (ADCA)
Diboron trioxide
Dibutyl phthalate (DBP)
Dibutyltin compounds
Dibutyltin dichloride (DBTC)
Dibutyl phthalate (DBP)
Dichromic acid
Dichromium tris(chromate)
Dicyclohexyl phthalate
Diethyl sulphate
Diethyl phthalate
Diisobutyl phthalate
Diisobutyl phthalate (DIBP)
Diisodecyl phthalate (DIDP)
Diisononyl phthalate (DINP)
Diisopentylphthalate
Dimethyl sulphate
Dimethylfumarate
Di-n-butyl phthalate (DBP)
Dinickel trioxide
Di-n-octyl phthalate (DNOP)
Dinoseb (6-sec-butyl-2,4-dinitrophenol)
Di-octyl phthalate (DOP)
Dioctyltin compounds
Dioxobis(stearato)trilead
Dipentyl phthalate (DPP)
Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)
Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)
Disodium octaborate
Disodium tetraborate, anhydrous

Dodecamethylcyclohexasiloxane
Ethylenediamine
Fatty acids, C16-18, lead salts
Fluorine (PFOS)
Formaldehyde
Formaldehyde, oligomeric reaction products with aniline
Formaldehyde, oligomeric reaction products with aniline (technical MDA)
Formamide
Furan
Henicosafuoroundecanoic acid
Heptacosafuorotetradecanoic acid
Hexabromocyclododecane
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane
Hexachloroethane
Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]
Hexavalent chrome and its compounds (Chromium 6 (Cr+6))
Hydrazine
Imidazolidine-2-thione (2-imidazoline-2-thiol)
Lead bis(tetrafluoroborate)
Lead chromate
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)
Lead cyanamidate
Lead di(acetate)
Lead diazide, Lead azide
Lead dinitrate
Lead dipicrate
Lead hydrogen arsenate
Lead monoxide (lead oxide)
Lead oxide sulfate
Lead styphnate
Lead sulfochromate yellow (C.I. Pigment Yellow 34)
Lead titanium trioxide
Lead titanium zirconium oxide
Lead(II) bis(methanesulfonate)
Methoxyacetic acid
Methylenediphenyl diisocyanate
Methyloxirane (Propylene oxide)
Musk xylene
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)

N,N-dimethylacetamide
N,N-dimethylformamide
Nickel dioxide
Nickel monoxide
Nickel subsulphide trinickel disulphide
Nickel sulphide
Nitrobenzene
N-methylacetamide
Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts
N-pentyl-isopentylphthalate
o-aminoazotoluene
Octa bromo diphenylether
Octamethylcyclotetrasiloxane
Orange lead (lead tetroxide)
Organotin compounds
o-Toluidine
Ozone depleting substances
p-(1,1-dimethylpropyl)phenol
Penta bromo diphenylether
Pentacosafuorotridecanoic acid
Pentadecafluorooctanoic acid (PFOA)
Pentalead tetraoxide sulphate
Pentazinc chromate octahydroxide
Perboric acid, sodium salt
Perfluorohexane-1-sulphonic acid and its salts (PFHxS)
Perfluorononan-1-oi-c-acid and its sodium and ammonium salts
Perfluorooctane sulfonate (PFOS)
Phenolphthalein
Pitch, coal tar, high temp.
Poly chlorinated biphenyl (PCB)
Poly chlorinated naphthalenes (PCN)
Polybrominated biphenyl (PBB)
Polybrominated diphenyl ether (PBDE)
Polychlorinated Terphenyls (PCTS)
Polycyclic aromatic hydrocarbons (PAH)
Polynaphthalene chloride
Potassium chromate
Potassium dichromate
Potassium hydroxyoctaoxidizincatedichromate
Pyrochlore, antimony lead yellow

reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)
Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RH-HP) with $\geq 0.1\%$ w/w 4-heptylphenol, branched and linear (4-HPbl)
Short chain chlorinated paraffins
Silicic acid ($H_2Si_2O_5$), barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD), the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]
Silicic acid, lead salt
Sodium chromate
Sodium dichromate
Sodium dichromate dihydrate
Sodium perborate, perboric acid, sodium salt
Sodium peroxometaborate
Sodium Salts of perfluorononan-1-oic acid
Strontium chromate
Sulfurous acid, lead salt, dibasic
Terphenyl, hydrogenated
Tetraboron disodium heptaoxide, hydrate
Tetracarbonylnickel; Nickel tetracarbonyl
Tetraethyllead
Tetralead trioxide sulphate
Toluene
Trichloroethylene
Tricosafuorododecanoic acid
Triethyl arsenate
Trilead bis(carbonate) dihydroxide
Trilead diarsenate
Trilead dioxide phosphonate
Tris(2-chloroethyl)phosphate
Tris(2-chloroethyl)phosphate (TCEP)
Tri-substituted organostannic compounds
Trixylyl phosphate
Zirconia Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (μm). c) alkaline oxide and alkali earth oxide ($Na_2O+K_2O+CaO+MgO+BaO$) content less or equal to 18% by weight
α, α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]

Sincerely,



Mark Ball
Process Superintendent Casting
Cast Products Department
Tomago Aluminium Company Pty Limited