



SAFETY DATA SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture Tin Based Products
Synonyms None.
Document number W06
Issue date 28-April-2015
Version number 02
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Supersedes date 28-April-2015

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Not available.
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Materion Advanced Materials Technologies and Services Inc.
Address 2978 Main Street
Buffalo, NY 14214
United States
Division Buffalo
Telephone 716-837-1000
e-mail Not available.
Contact person Not available.

1.4. Emergency telephone number 800-424-9300 Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification Repr. Cat. 1;R61, Repr. Cat. 3;R62, Xn;R20/22, R33, N;R50/53

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Acute toxicity, inhalation	Category 4	H332 - Harmful if inhaled.
Carcinogenicity	Category 2	H351 - Suspected of causing cancer.
Reproductive toxicity (fertility, the unborn child)	Category 1A	H360FD - May damage fertility. May damage the unborn child.
Specific target organ toxicity - repeated exposure	Category 2	H373 - May cause damage to organs through prolonged or repeated exposure.

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard	Category 1	H400 - Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term aquatic hazard	Category 1	H410 - Very toxic to aquatic life with long lasting effects.

Hazard summary

Physical hazards Not classified for physical hazards.
Health hazards May cause harm to the unborn child. Also harmful by inhalation and if swallowed. Danger of cumulative effects. Possible risk of impaired fertility.
Environmental hazards Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Specific hazards Not available.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains:	Indium, Lead, Silver, Tin
Hazard pictograms	None.
Signal word	Danger
Hazard statements	
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER/doctor if you feel unwell.
P330	Rinse mouth.
P391	Collect spillage.

Storage

P405	Store locked up.
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Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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Supplemental label information

74,14 % of the mixture consists of component(s) of unknown acute oral toxicity. 89,22 % of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 89,22 % of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Tin	50 - < 70	7440-31-5 231-141-8	-	-	#
Classification:	DSD: -				
	CLP: -				
Indium	12 - < 40	7440-74-6 231-180-0	-	-	
Classification:	DSD: -				
	CLP: -				

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Lead	0 - < 35	7439-92-1 231-100-4	-	082-001-00-6	#
Classification:	DSD: Repr. Cat. 1;R61, Repr. Cat. 3;R62, Xn;R20/22, R33				A,E,1
	CLP: Acute Tox. 4;H302, Acute Tox. 4;H332, Carc. 2;H351, Repr. 1A;H360FD, STOT RE 2;H373				1,A
Silver	0 - < 25	7440-22-4 231-131-3	-	-	# M=1000
Classification:	DSD: N;R50/53				
	CLP: Aquatic Acute 1;H400, Aquatic Chronic 1;H410				

SECTION 4: First aid measures

General information Not available.

4.1. Description of first aid measures

Inhalation Not available.

Skin contact Not available.

Eye contact Not available.

Ingestion Not available.

4.2. Most important symptoms and effects, both acute and delayed Not available.

4.3. Indication of any immediate medical attention and special treatment needed Not available.

SECTION 5: Firefighting measures

General fire hazards Not available.

5.1. Extinguishing media

Suitable extinguishing media Not available.

Unsuitable extinguishing media Not available.

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Not available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Not available.

For emergency responders Not available.

6.2. Environmental precautions Not available.

6.3. Methods and material for containment and cleaning up Not available.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Not available.

7.2. Conditions for safe storage, including any incompatibilities Not available.

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value	Form
Indium (CAS 7440-74-6)	MAK	0,1 mg/m ³	Inhalable fraction.
	STEL	0,2 mg/m ³	Inhalable fraction.
Lead (CAS 7439-92-1)	MAK	0,1 mg/m ³	Inhalable fraction.
	STEL	0,4 mg/m ³	Inhalable fraction.
Silver (CAS 7440-22-4)	MAK	0,1 mg/m ³	Inhalable fraction.
	STEL	0,1 mg/m ³	Inhalable fraction.
Tin (CAS 7440-31-5)	MAK	2 mg/m ³	Inhalable fraction.
	STEL	4 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values.

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³	Dust and fume.
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³	
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0,05 mg/m ³
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	0,1 mg/m ³

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value
Indium (CAS 7440-74-6)	MAC	0,1 mg/m ³
	STEL	0,3 mg/m ³
Lead (CAS 7439-92-1)	MAC	0,15 mg/m ³
Silver (CAS 7440-22-4)	MAC	0,1 mg/m ³
Tin (CAS 7440-31-5)	MAC	2 mg/m ³

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Lead (CAS 7439-92-1)	Ceiling	0,2 mg/m ³
	TWA	0,05 mg/m ³
Silver (CAS 7440-22-4)	Ceiling	0,3 mg/m ³
	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	Ceiling	4 mg/m ³
	TWA	2 mg/m ³

Denmark. Exposure Limit Values

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TLV	0,1 mg/m ³	Dust.
Lead (CAS 7439-92-1)	TLV	0,05 mg/m ³	Dust and fume.
Silver (CAS 7440-22-4)	TLV	0,01 mg/m ³	Dust.

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value	Form
Lead (CAS 7439-92-1)	TWA	0,1 mg/m ³	Total dust.
		0,05 mg/m ³	Respirable dust.
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³	

Finland. Workplace Exposure Limits

Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³

Finland. Workplace Exposure Limits

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0,1 mg/m ³
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value
Lead (CAS 7439-92-1)	VME	0,1 mg/m ³
Silver (CAS 7440-22-4)	VME	0,1 mg/m ³

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³	Inhalable fraction.
Tin (CAS 7440-31-5)	TWA	0,02 mg/m ³	Vapor and aerosol, inhalable fraction.
		0,004 ppm	Vapor and aerosol, inhalable fraction.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Silver (CAS 7440-22-4)	AGW	0,1 mg/m ³	Inhalable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value
Indium (CAS 7440-74-6)	STEL	1 mg/m ³
	TWA	1 mg/m ³
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³
Silver (CAS 7440-22-4)	STEL	0,4 mg/m ³
	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	STEL	8 mg/m ³
	TWA	2 mg/m ³

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	Dust.
Lead (CAS 7439-92-1)	TWA	0,05 mg/m ³	Dust and fume.
Silver (CAS 7440-22-4)	TWA	0,01 mg/m ³	Dust.

Ireland. Occupational Exposure Limits

Components	Type	Value
Indium (CAS 7440-74-6)	STEL	0,3 mg/m ³
	TWA	0,1 mg/m ³
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Italy. Occupational Exposure Limits

Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value
Lead (CAS 7439-92-1)	STEL	0,01 mg/m ³
	TWA	0,005 mg/m ³
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³	Inhalable fraction.
		0,07 mg/m ³	Respirable fraction.
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³	
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³

Netherlands. OELs (binding)

Components	Type	Value	Form
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³	Dust and fume.
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³	

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TLV	0,1 mg/m ³	
Lead (CAS 7439-92-1)	TLV	0,05 mg/m ³	Dust and fume.
Silver (CAS 7440-22-4)	TLV	0,1 mg/m ³	Dust and fume.
Tin (CAS 7440-31-5)	TLV	2 mg/m ³	

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value	Form
Lead (CAS 7439-92-1)	TWA	0,05 mg/m ³	
Silver (CAS 7440-22-4)	TWA	0,05 mg/m ³	Inhalable fraction.
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	Inhalable fraction.

Portugal. Decree-Law No. 24/2012, Binding Occupational Exposure Limit Values, Annex I (Diário da República - I.a série - No. 26)

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

Components	Type	Value
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³
Lead (CAS 7439-92-1)	TWA	0,05 mg/m ³
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value
Lead (CAS 7439-92-1)	STEL	0,1 mg/m ³
	TWA	0,05 mg/m ³
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value	Form
Lead (CAS 7439-92-1)	TWA	0,5 mg/m ³	Inhalable fraction.
		0,15 mg/m ³	Respirable fraction.
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³	
Tin (CAS 7440-31-5)	STEL	4 mg/m ³	
	TWA	2 mg/m ³	

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	Inhalable fraction.
Lead (CAS 7439-92-1)	TWA	0,1 mg/m ³	Inhalable fraction.
Silver (CAS 7440-22-4)	TWA	0,01 mg/m ³	
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	

Spain. Occupational Exposure Limits

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³	
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³	
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	

Sweden. Occupational Exposure Limit Values

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	Total dust.
Lead (CAS 7439-92-1)	TWA	0,1 mg/m ³	Inhalable dust.
		0,05 mg/m ³	Respirable dust.
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³	Total dust.
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	Inhalable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	Inhalable dust.
Lead (CAS 7439-92-1)	STEL	0,8 mg/m ³	Inhalable dust.
	TWA	0,1 mg/m ³	Inhalable dust.
Silver (CAS 7440-22-4)	STEL	0,8 mg/m ³	Inhalable dust.
	TWA	0,1 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Indium (CAS 7440-74-6)	STEL	0,3 mg/m ³	
		0 ppm	
	TWA	0,1 mg/m ³	
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³	
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³	

EU. Directive 98/24/EC: on the protection of workers from the risks related to chemical agents at work, Annex I

List of Binding Occupational Exposure Limit Values

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0,15 mg/m ³

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
Silver (CAS 7440-22-4)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Biological limit values

Czech Republic. Limit Values for Indicators of Biological Exposure Tests in Urine and Blood, Annex 2, Tables 1 and 2, Government Decree 432/2003 Sb.

Components	Value	Determinant	Specimen	Sampling time
Lead (CAS 7439-92-1)	0,035 µmol/mmol	Coproporphyrin	Creatinine in urine	*
	0,2 mg/g	Coproporphyrin	Creatinine in urine	*
	0,4 mg/l	Lead	Blood	*

* - For sampling details, please see the source document.

Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV), Social Affairs and Ministry of Health

Components	Value	Determinant	Specimen	Sampling time
Lead (CAS 7439-92-1)	1,4 µmol/l	Lead	Blood	*

* - For sampling details, please see the source document.

Germany. TRGS 903, BAT List (Biological Limit Values)

Components	Value	Determinant	Specimen	Sampling time
Lead (CAS 7439-92-1)	300 µg/l	Blei	Blood	*

* - For sampling details, please see the source document.

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Components	Value	Determinant	Specimen	Sampling time
Lead (CAS 7439-92-1)	300 µg/l	lead	Blood	*
	1,5 µmol/l	lead	Blood	*
	100 µmol/mol hb	zinc protoporphyrin (for pre-screening)	Hemoglobin in blood	

* - For sampling details, please see the source document.

Luxembourg. Biological limit values (Annex II), Memorial A, n. 96, p. 1948

Components	Value	Determinant	Specimen
Lead (CAS 7439-92-1)	70 ug/ml	Pb	Blood

Portugal. Decree-Law No. 24/2012, Binding Biological Limit Values, Annex II (Diário da República - I.a série - No. 26)

Components	Value	Determinant	Specimen
Lead (CAS 7439-92-1)	70 µg/100 ml	Chumbo	Blood

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Components	Value	Determinant	Specimen	Sampling time
Lead (CAS 7439-92-1)	100 µg/l	Lead	Blood	*
	4,03 mg/g	δ-Aminolevulini c acid	Creatinine in urine	
	0,2 mg/g	Coproporphyrin	Creatinine in urine	*
	6 mg/l	δ-Aminolevulini c acid		
	0,3 mg/l	Coproporphyrin	Urine	*

* - For sampling details, please see the source document.

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Components	Value	Determinant	Specimen	Sampling time
Lead (CAS 7439-92-1)	70 µg/dl	Plomo	Blood	*

* - For sampling details, please see the source document.

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

Components	Value	Determinant	Specimen	Sampling time
Lead (CAS 7439-92-1)	100 µg/l	Blei (Frauen < 45 Jahre)	Blood	*

* - For sampling details, please see the source document.

EU. Directive 98/24/EC: on the protection of workers from the risks related to chemical agents at work, Annex II Binding Biological Limit Values and Health Surveillance Measures

Components	Value	Determinant	Specimen
Lead (CAS 7439-92-1)	70 µg/100 ml	Lead	Blood

Recommended monitoring procedures

Not available.

Derived no-effect level (DNEL)

Not available.

Predicted no effect concentrations (PNECs)

Not available.

8.2. Exposure controls**Appropriate engineering controls**

Not available.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Not available.

Skin protection	
- Hand protection	Not available.
- Other	Not available.
Respiratory protection	Not available.
Thermal hazards	Not available.
Hygiene measures	Not available.
Environmental exposure controls	Not available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state	Solid.
Form	Not available.
Colour	Not available.
Odour	Not applicable.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	156,6 °C (313,88 °F) estimated
Initial boiling point and boiling range	1740 °C (3164 °F) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	0,00001 hPa estimated
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Solubility (other)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	630 °C (1166 °F) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidizing properties	Not available.

9.2. Other information

Density	8,24 g/cm3 estimated
Specific gravity	8,24 estimated

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	Not available.
10.3. Possibility of hazardous reactions	Not available.
10.4. Conditions to avoid	Not available.
10.5. Incompatible materials	Not available.
10.6. Hazardous decomposition products	Not available.

SECTION 11: Toxicological information

General information Not available.

Information on likely routes of exposure

Inhalation Not available.

Skin contact Not available.

Eye contact Not available.

Ingestion Not available.

Symptoms Not available.

11.1. Information on toxicological effects

Components	Species	Test results
Silver (CAS 7440-22-4)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
Oral		
LD50	Rat	> 5000 mg/kg
Skin corrosion/irritation	Not available.	
Serious eye damage/eye irritation	Not available.	
Respiratory sensitisation	Not available.	
Skin sensitisation	Not available.	
Germ cell mutagenicity	Not available.	
Carcinogenicity		
IARC Monographs. Overall Evaluation of Carcinogenicity		
Lead (CAS 7439-92-1)		2B Possibly carcinogenic to humans.
Reproductive toxicity	Not available.	
Specific target organ toxicity - single exposure	Not available.	
Specific target organ toxicity - repeated exposure	Not available.	
Aspiration hazard	Not available.	
Mixture versus substance information	Not available.	
Other information	Not available.	

SECTION 12: Ecological information

12.1. Toxicity

Components	Species	Test results
Silver (CAS 7440-22-4)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 0,0002 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas) 0,0023 - 0,0033 mg/l, 96 hours
12.2. Persistence and degradability	Not available.	
12.3. Bioaccumulative potential	Not available.	
Partition coefficient n-octanol/water (log Kow)	Not available.	
Bioconcentration factor (BCF)	Not available.	
12.4. Mobility in soil	Not available.	
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.	
12.6. Other adverse effects	Not available.	

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Not available.
Contaminated packaging	Not available.
EU waste code	Not available.

SECTION 14: Transport information

ADR

14.1. UN number	UN3077
14.2. UN proper shipping name	Environmentally hazardous substance, solid, n.o.s.
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Hazard No. (ADR)	90
Tunnel restriction code	E
14.4. Packing group	III
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Not available.

RID

14.1. UN number	UN3077
14.2. UN proper shipping name	Environmentally hazardous substance, solid, n.o.s.
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
14.4. Packing group	III
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Not available.

ADN

14.1. UN number	UN3077
14.2. UN proper shipping name	Environmentally Hazardous Solid, N.o.s.
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
14.4. Packing group	III
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Not available.

IATA

14.1. UN number	UN3077
14.2. UN proper shipping name	Environmentally hazardous substance, solid, n.o.s.
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
14.4. Packing group	III
14.5. Environmental hazards	Yes
ERG Code	9L
14.6. Special precautions for user	Not available.

Other information

Passenger and cargo aircraft Allowed.
Cargo aircraft only Allowed.

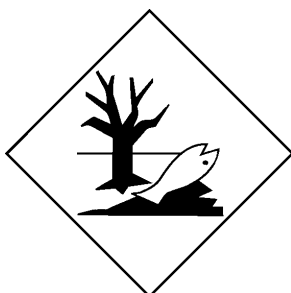
IMDG

14.1. UN number UN3077
14.2. UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
14.3. Transport hazard class(es)
Class 9
Subsidiary risk -
14.4. Packing group III
14.5. Environmental hazards
Marine pollutant Yes
EmS F-A, S-F
14.6. Special precautions for user Not available.

ADN; ADR; IATA; IMDG; RID



Marine pollutant



SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I, as amended
Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II, as amended
Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V
Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended
Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA
Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Lead (CAS 7439-92-1)

Restrictions on use

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use

Lead (CAS 7439-92-1)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended

Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended

Lead (CAS 7439-92-1)

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances

Lead (CAS 7439-92-1)

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended

Lead (CAS 7439-92-1)

Directive 94/33/EC on the protection of young people at work, as amended

Lead (CAS 7439-92-1)

National regulations Not available.

15.2. Chemical safety assessment Not available.

SECTION 16: Other information

List of abbreviations Not available.

References Not available.

Information on evaluation method leading to the classification of mixture Not available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R20/22 Harmful by inhalation and if swallowed.

R33 Danger of cumulative effects.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R61 May cause harm to the unborn child.

R62 Possible risk of impaired fertility.

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H351 Suspected of causing cancer.

H360FD May damage fertility. May damage the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Revision information None.

Training information Not available.