SAFETY DATA SHEET

Creation Date 16-Nov-2010 **Revision Date** 20-Aug-2015 **Revision Number** 5

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification

Product Description: **Wood"s metal**
Cat No. : **388550000; 388551000; 388555000**
CAS-No 76093-98-6
Molecular Formula Bi . Cd . Pb . Sn

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium
E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards
Based on available data, the classification criteria are not met

Health hazards

Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 2
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1B
Reproductive Toxicity	Category 1A
Specific target organ toxicity - (repeated exposure)	Category 1

Environmental hazards

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

2.2. Label elements

Signal Word **Danger**

Hazard Statements

H302 - Harmful if swallowed
H330 - Fatal if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H360Df - May damage the unborn child. Suspected of damaging fertility
H372 - Causes damage to organs through prolonged or repeated exposure
H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

P201 - Obtain special instructions before use
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P307 + P311 - IF exposed: Call a POISON CENTER or doctor/ physician

Additional EU labelling

Restricted to professional users

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12	76093-98-6		100	Acute Tox. 4 (H302) Acute Tox. 2 (H330) Muta. 2 (H341) Carc. 1B (H350) Repr. 1A (H360Df) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Bismuth	7440-69-9	EEC No. 231-177-4	-	-
Lead	7439-92-1	EEC No. 231-100-4	-	Acute Tox. 4 (H332) Acute Tox. 4 (H302) Repr. 1A (H360Df) STOT RE 2 (H373) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Cadmium	7440-43-9	EEC No. 231-152-8	-	Acute Tox. 2 (H330) Muta. 2 (H341) Carc. 1B (H350) Repr. 2 (H361fd) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Tin	7440-31-5	EEC No. 231-141-8	-	-

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Ingestion Do not induce vomiting. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

Protection of First-aiders Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Water spray. Carbon dioxide (CO_2). Dry chemical. chemical foam.

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

Non-combustible. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Highly toxic fumes, Heavy metal oxides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with the skin and the eyes.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

6.3. Methods and material for containment and cleaning up

Wear self-contained breathing apparatus and protective suit. Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not let this chemical enter the environment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Ensure adequate ventilation. Wear personal protective equipment. Use only in area provided with appropriate exhaust ventilation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. Avoid breathing dust/fume/gas/mist/vapours/spray.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits
List source(s): **UK** - EH40/2005 Containing the workplace exposure limits (WELs) for use with the Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended). Updated by September 2006 official press release and October 2007 Supplement.

Component	European Union	The United Kingdom	France	Belgium	Spain
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12		STEL: 4 mg/m³ 15 min STEL: 0.075 mg/m³ 15 min STEL: 0.45 mg/m³ 15 min TWA: 2 mg/m³ 8 hr TWA: 0.025 mg/m³ 8 hr TWA: 0.15 mg/m³ 8 hr	TWA / VME: 0.05 mg/m³ (8 heures). TWA / VME: 0.1 mg/m³ (8 heures). restrictive limit		TWA / VLA-ED: 2 mg/m³ (8 horas) TWA / VLA-ED: 0.15 mg/m³ (8 horas) TWA / VLA-ED: 0.01 mg/m³ (8 horas) TWA / VLA-ED: 0.002 mg/m³ (8 horas)
Lead		STEL: 0.45 mg/m³ 15 min TWA: 0.15 mg/m³ 8 hr	TWA / VME: 0.1 mg/m³ (8 heures). restrictive limit		TWA / VLA-ED: 0.15 mg/m³ (8 horas)
Cadmium		STEL: 0.075 mg/m³ 15 min TWA: 0.025 mg/m³ 8 hr Carc.	TWA / VME: 0.05 mg/m³ (8 heures).	TWA: 0.002 mg/m³ 8 uren TWA: 0.01 mg/m³ 8 uren	TWA / VLA-ED: 0.01 mg/m³ (8 horas) TWA / VLA-ED: 0.002 mg/m³ (8 horas)
Tin		STEL: 4 mg/m³ 15 min TWA: 2 mg/m³ 8 hr		TWA: 2 mg/m³ 8 uren Huid	TWA / VLA-ED: 2 mg/m³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12		Haut	TWA: 2 mg/m³ 8 horas TWA: 0.05 mg/m³ 8 horas TWA: 0.002 mg/m³ 8 horas		
Lead	TWA: 0.075 mg/m³ 8 ore. Media Ponderata		TWA: 0.15 mg/m³ 8 horas TWA: 0.05 mg/m³ 8 horas		TWA: 0.1 mg/m³ 8 tunteina

Cadmium		Haut	TWA: 0.01 mg/m³ 8 horas TWA: 0.002 mg/m³ 8 horas		TWA: 0.02 mg/m³ 8 tunteina Iho
Tin			TWA: 2 mg/m³ 8 horas		TWA: 2 mg/m³ 8 tunteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12	MAK-KZW: 4 mg/m³ 15 Minuten MAK-KZW: 0.4 mg/m³ 15 Minuten MAK-TMW: 2 mg/m³ 8 Stunden MAK-TMW: 0.1 mg/m³ 8 Stunden		Haut/Peau STEL: 4 mg/m³ 15 Minuten STEL: 0.8 mg/m³ 15 Minuten TWA: 2 mg/m³ 8 Stunden TWA: 0.015 mg/m³ 8 Stunden TWA: 0.1 mg/m³ 8 Stunden		TWA: 2 mg/m³ 8 timer TWA: 0.05 mg/m³ 8 timer
Lead	MAK-KZW: 0.4 mg/m³ 15 Minuten MAK-TMW: 0.1 mg/m³ 8 Stunden	TWA: 0.05 mg/m³ 8 timer	STEL: 0.8 mg/m³ 15 Minuten TWA: 0.1 mg/m³ 8 Stunden	TWA: 0.05 mg/m³ 8 godzinach	TWA: 0.05 mg/m³ 8 timer STEL: 0.05 mg/m³ 15 minutter. dust and fume
Cadmium	TRK-KZW: 0.12 mg/m³ 15 Minuten TRK-KZW: 0.06 mg/m³ 15 Minuten TRK-TMW: 0.03 mg/m³ TRK-TMW: 0.015 mg/m³	TWA: 0.005 mg/m³ 8 timer	Haut/Peau TWA: 0.015 mg/m³ 8 Stunden	TWA: 0.01 mg/m³ 8 godzinach TWA: 0.002 mg/m³ 8 godzinach	TWA: 0.05 mg/m³ 8 timer STEL: 0.05 mg/m³ 15 minutter.
Tin	MAK-KZW: 4 mg/m³ 15 Minuten MAK-TMW: 2 mg/m³ 8 Stunden		Haut/Peau STEL: 4 mg/m³ 15 Minuten TWA: 2 mg/m³ 8 Stunden	TWA: 2 mg/m³ 8 godzinach	TWA: 2 mg/m³ 8 timer

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Bismuth	TWA: 5.0 mg/m³				
Lead	TWA: 0.05 mg/m³	TWA-GVI: 0.15 mg/m³ 8 satima.	TWA: 0.15 mg/m³ 8 hr. STEL: 0.45 mg/m³ 15 min	TWA: 0.15 mg/m³	TWA: 0.05 mg/m³ 8 hodinách. Ceiling: 0.2 mg/m³
Cadmium	TWA: 0.05 mg/m³		TWA: 0.025 mg/m³ 8 hr. STEL: 0.075 mg/m³ 15 min		TWA: 0.05 mg/m³ 8 hodinách. Potential for cutaneous absorption Ceiling: 0.1 mg/m³
Tin		TWA-GVI: 2 mg/m³ 8 satima.	TWA: 2 mg/m³ 8 hr. STEL: 6 mg/m³ 15 min	TWA: 2 mg/m³	

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Lead	TWA: 0.1 mg/m³ 8 tundides. total dust TWA: 0.05 mg/m³ 8 tundides. respirable dust	TWA: 0.15 mg/m³ 8 hr	TWA: 0.15 mg/m³	TWA: 0.15 mg/m³ 8 órában. AK	TWA: 0.05 mg/m³ 8 klukkustundum. dust, fume, and powder Ceiling: 0.1 mg/m³ dust, fume, and powder
Cadmium	TWA: 0.05 mg/m³ 8 tundides. total dust TWA: 0.01 mg/m³ 8 tundides. respirable dust		STEL: 0.1 mg/m³ TWA: 0.025 mg/m³	Ceiling: 0.015 mg/m³ MK	TWA: 0.03 mg/m³ 8 klukkustundum. total dust, fume, or powder TWA: 0.01 mg/m³ 8 klukkustundum. respirable dust, fume, or powder Ceiling: 0.06 mg/m³ total dust, fume or powder Ceiling: 0.02 mg/m³ respirable dust, fume, or powder
Tin			TWA: 2 mg/m³		

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Bismuth	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³ IPRD			

Lead	STEL: 0.01 mg/m³ TWA: 0.005 mg/m³	TWA: 0.15 mg/m³ inhalable fraction IPRD TWA: 0.07 mg/m³ respirable fraction IPRD	TWA: 0.15 mg/m³ 8 Stunden		TWA: 0.05 mg/m³ 8 ore STEL: 0.10 mg/m³ 15 minute
Cadmium	STEL: 0.05 mg/m³ TWA: 0.01 mg/m³	TWA: 0.05 mg/m³ inhalable fraction IPRD TWA: 0.01 mg/m³ respirable fraction IPRD			TWA: 0.05 mg/m³ 8 ore
Tin				TWA: 2 mg/m³	

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Bismuth	MAC: 0.5 mg/m³				
Lead	TWA: 0.05 mg/m³	TWA: 0.15 mg/m³	TWA: 0.1 mg/m³ 8 urah inhalable fraction STEL: 0.4 mg/m³ 15 minutah inhalable fraction	LLV: 0.1 mg/m³ 8 timmar. total inhalable dust LLV: 0.05 mg/m³ 8 timmar. total respirable dust	TWA: 0.15 mg/m³ 8 saat
Cadmium	TWA: 0.01 mg/m³ STEL: 0.05 mg/m³ aerosol	TWA: 0.03 mg/m³ 8 hodinách manufactured TWA: 0.15 mg/m³ 8 hodinách others STEL: 0.15 mg/m³ 15 minútach manufactured STEL: 0.75 mg/m³ 15 minútach others	TWA: 0.03 mg/m³ 8 urah inhalable fraction, powders, aerosols TWA: 0.015 mg/m³ 8 urah inhalable fraction, powders, aerosols STEL: 0.12 mg/m³ 15 minutah inhalable fraction, dust, aerosols STEL: 0.06 mg/m³ 15 minutah other inhalable fraction, dust, aerosols	LLV: 0.02 mg/m³ 8 timmar. total dust LLV: 0.005 mg/m³ 8 timmar. respirable dust	
Tin			TWA: 0.1 mg/m³ 8 urah inhalable fraction TWA: 2 mg/m³ 8 urah inhalable fraction Koža	LLV: 2 mg/m³ 8 timmar. total inhalable dust	TWA: 2 mg/m³ 8 saat

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Component	European Union	United Kingdom	France	Spain	Germany
Lead			Lead: 400 µg/L blood Lead: 300 µg/L blood Lead: 200 µg/L blood Lead: 100 µg/L blood	Lead: 70 µg/dL blood not critical	Lead: 300 µg/L whole blood (no restriction women age below 45 years) Lead: 400 µg/L whole blood (no restriction women 45 years and older)
Cadmium			Cadmium: 0.005 mg/g creatinine urine not critical Cadmium: 0.005 mg/L blood not critical	Cadmium: 5 µg/g Creatinine urine not critical Cadmium: 5 µg/L blood not critical	

Component	Italy	Finland	Denmark	Bulgaria	Romania
Lead	60 Pb µg/100mL blood end of workweek	Lead: 1.4 µmol/L blood not critical.	Lead: 20 µg/100mL blood	Lead: 300 µg/L blood not fixed for women under 45 years old Lead: 400 µg/L blood not fixed	Lead: 150 µg/L urine end of shift Lead: 40 µg/100mL blood end of shift Lead: 3 µg/cm hair end of shift .delta.-Aminolevulinic acid: 10 mg/L urine end of shift Coproporphyrin: 300 µg/L urine end of shift Erythrocytes

					protoporphyrin: 100 µg/100mL erythrocyte blood end of shift
Cadmium					Cadmium: 5 µg/g Creatinine urine end of shift Cadmium: 5 µg/L blood end of shift Protein: 2 mg/L urine end of shift

Component	Gibraltar	Latvia	Slovak Republic	Luxembourg	Turkey
Lead	70 µg/100 mL blood Lead 0.075 TWA medical surveillance threshold in air measured as a time weighted average over 40 hours per week 40 blood Lead medical surveillance threshold measured in individual workers	Lead: 40 µg/100mL blood Coproporphyrin: 100 µg/g Creatinine urine Aminolevulinic acid: 5 mg/g Creatinine urine	Lead: 400 µg/L blood not critical Lead: 100 µg/L blood not critical women younger than 45 years of age .delta.-Aminolevulinic acid: 15 mg/L urine not critical .delta.-Aminolevulinic acid: 6 mg/L urine not critical women younger than 45 years of age Coproporphyrins: 0.30 mg/L urine not critical	Lead: 70 µg/100mL blood. Lead: 0.075 mg/m³ blood. medical surveillance threshold in air measured as a time weighted average over 40 hours per week Lead: 40 µg/100mL blood. medical surveillance threshold measured in individual workers	Lead: 70 µg/100mL blood
Cadmium		Cadmium: 5 µg/L blood Cadmium: 5 µg/g Creatinine urine Cadmium: 6 µg/L urine	Cadmium: 7 µg/L urine not critical Carcinogen, category 2		

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust
MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry
MDHS 99 Metals in air by ICP-AES

Derived No Effect Level (DNEL) No information available

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral				
Dermal				
Inhalation				

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)
Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber Nitrile rubber Neoprene PVC	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection	Long sleeved clothing

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced **Recommended Filter type:** Particulates filter conforming to EN 143
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. **Recommended half mask:-** Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Grey	
Physical State	Solid	
Odor	No information available	
Odor Threshold	No data available	
pH	No data available	
Melting Point/Range	70 °C / 158 °F	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flash Point	No information available	**Method -** No information available
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	Insoluble	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Autoignition Temperature		
Decomposition Temperature	No data available	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	No information available	

9.2. Other information

Molecular Formula	Bi . Cd . Pb . Sn

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions No information available.

10.4. Conditions to avoid

Incompatible products.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Highly toxic fumes. Heavy metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;
Oral Category 4
Dermal No data available
Inhalation Category 2

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Bismuth	LD50 = 5 g/kg (Rat)		
Cadmium	LD50 = 1140 mg/kg (Rat)		LC50 = 25 mg/m³ (Rat) 30 min
Tin	LD50 = 700 mg/kg (Rat)		

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; Category 2

Contains a known or suspected mutagen

(f) carcinogenicity; Category 1B

Possible cancer hazard. May cause cancer based on animal data This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B) The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC

Lead			Cat. 2	Group 2A
Cadmium	Carc Cat. 1B		Cat. 2 Cat. 1	Group 1

(g) reproductive toxicity; Category 1A

Reproductive Effects Product is or contains a chemical which is a known or suspected reproductive hazard. May impair fertility. Possible risk of harm to the unborn child.

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; Category 1

Target Organs No information available.

(j) aspiration hazard; Not applicable
Solid

Other Adverse Effects May cause respiratory irritation May be harmful if absorbed through the skin. May cause irritation of the digestive tract. The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information

Symptoms / effects,both acute and delayed No information available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Lead	LC50: = 1.32 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 1.17 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: = 0.44 mg/L, 96h semi-static (Cyprinus carpio)	EC50: = 600 µg/L, 48h (water flea)		
Cadmium	LC50: 0.0004 - 0.003 mg/L, 96h (Pimephales promelas) LC50: = 0.016 mg/L, 96h (Oryzias latipes) LC50: = 21.1 mg/L, 96h flow-through (Lepomis macrochirus) LC50: = 0.24 mg/L, 96h static (Cyprinus carpio) LC50: = 4.26 mg/L, 96h semi-static (Cyprinus carpio) LC50: = 0.002 mg/L, 96h (Cyprinus carpio) LC50: = 0.006 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 0.003 mg/L, 96h flow-through (Oncorhynchus mykiss)	EC50: = 0.0244 mg/L, 48h Static (Daphnia magna)		

12.2. Persistence and degradability The product includes heavy metals. Prevent release into the environment. Special pretreatment required

Persistence	Insoluble in water, May persist.
Degradability	Not relevant for inorganic substances.
Degradation in sewage treatment plant	Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential May have some potential to bioaccumulate; Product has a high potential to bioconcentrate

12.4. Mobility in soil Spillage unlikely to penetrate soil Is not likely mobile in the environment due its low water solubility.

12.5. Results of PBT and vPvB assessment No data available for assessment.

12.6. Other adverse effects

Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products	Should not be released into the environment. Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point.
European Waste Catalogue (EWC)	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Other Information	Do not dispose of waste into sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number	UN2570
14.2. UN proper shipping name	CADMIUM COMPOUND
14.3. Transport hazard class(es)	6.1
14.4. Packing group	II

ADR

14.1. UN number	UN2570
14.2. UN proper shipping name	CADMIUM COMPOUND
14.3. Transport hazard class(es)	6.1
14.4. Packing group	II

IATA

14.1. UN number	UN2570
14.2. UN proper shipping name	CADMIUM COMPOUND
14.3. Transport hazard class(es)	6.1
14.4. Packing group	II

14.5. Environmental hazards Dangerous for the environment
Product is a marine pollutant according to the criteria set by IMDG/IMO

14.6. Special precautions for user No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Bismuth	231-177-4	-		X	X	-	X	-	X	X	X
Lead	231-100-4	-		X	X	-	X	X	X	X	X
Cadmium	231-152-8	-		X	X	-	X	-	X	X	X
Tin	231-141-8	-		X	X	-	X	-	X	X	X

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Lead		Use restricted. See item 63. (see *http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006R1907:EN:NOT* for restriction details)	
Cadmium		Use restricted. See item 23. (see *http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006R1907:EN:NOT* for restriction details) Use restricted. See item 28. (see *http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006R1907:EN:NOT* for restriction details)	SVHC Candiate list - Carcinogenic (Article 57a)

National Regulations

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Bismuth	nwg - nicht wassergefährdend (non-hazardous to waters)	
Lead	nwg - nicht wassergefährdend (non-hazardous to waters)	Class II : 0.5 mg/m³ (Massenkonzentration)
Cadmium	WGK 3	Krebserzeugende Stoffe - Class I : 0.05 mg/m³ (Massenkonzentration)
Tin	nwg - nicht wassergefährdend (non-hazardous to waters)	Class III : 1 mg/m³ (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Lead	Tableaux des maladies professionnelles (TMP) - RG 1
Cadmium	Tableaux des maladies professionnelles (TMP) - RG 61,RG 61bis

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.
Take note of Dir 94/33/EC on the protection of young people at work
Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women at work
Take note of Dir 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full Text of H-/EUH-Statements Referred to Under Section 3

H302 - Harmful if swallowed
H330 - Fatal if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H360Df - May damage the unborn child. Suspected of damaging fertility
H372 - Causes damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

PNEC - Predicted No Effect Concentration

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - Volatile Organic Compounds

Key literature references and sources for data

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method
Environmental hazards	Calculation method

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.
Chemical incident response training.

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This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

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End of Safety Data Sheet