SAFETY DATA SHEET

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 16-Nov-2010 **Revision Date** 18-Oct-2023 **Revision Number** 9

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

1.1. Product identifier

Product Description: **Wood's metal m.p. ca. 70°C**
Cat No. : **W/0350/48, W/0350/53**
Index No 048-001-00-5
CAS No 76093-98-6
Molecular Formula Bi . Cd . Pb . Sn

Unique Formula Identifier (UFI) **R2RM-XU67-3W0J-CM60**

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

UK entity/business name
Fisher Scientific UK
Bishop Meadow Road, Loughborough,
Leicestershire LE11 5RG, United Kingdom

EU entity/business name
Thermo Fisher Scientific
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

Tel: 01509 231166
Chemtrec US: (800) 424-9300
Chemtrec EU: 001-703-527-3887

Poison Centre - Emergency information services

Ireland : National Poisons Information Centre (NPIC) -
01 809 2166 (8am-10pm, 7 days a week)
Malta : +356 2395 2000
Cyprus : +357 2240 5611

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Acute Inhalation Toxicity - Dusts and Mists	Category 2 (H330)
Germ Cell Mutagenicity	Category 2 (H341)
Carcinogenicity	Category 1B (H350)
Reproductive Toxicity	Category 1A (H360FD)
Effects on or via lactation	(H362)
Specific target organ toxicity - (repeated exposure)	Category 1 (H372)

Environmental hazards

Acute aquatic toxicity	Category 1 (H400)
Chronic aquatic toxicity	Category 1 (H410)

Full text of Hazard Statements: see section 16

2.2. Label elements

Signal Word **Danger**

Hazard Statements

H330 - Fatal if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H362 - May cause harm to breast-fed children
H372 - Causes damage to organs through prolonged or repeated exposure
H360FD - May damage fertility. May damage the unborn child
H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

P201 - Obtain special instructions before use
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P263 - Avoid contact during pregnancy and while nursing

Additional EU labelling

Restricted to professional users

2.3. Other hazards

Toxic to terrestrial vertebrates
This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12	76093-98-6		100	Acute Tox. 2 (H330) Muta. 2 (H341) Carc. 1B (H350) Repr. 2 (H360df) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Bismuth	7440-69-9	EEC No. 231-177-4	-	-
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	-	-
Lead	7439-92-1	EEC No. 231-100-4	-	Repr. 1A (H360DF) STOT RE 1 (H372) Lact. (H362)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12	Repr. 2 (H361f) :: C>=2.5% STOT RE 2 (H373) :: C>=0.5%	-	-
Cadmium	-	10	-
Lead	Repr. 1A : C ≥ 0.03 % STOT RE 1 : C ≥ 0.5 %	-	-

Note
Note 1: The concentration stated or, in the absence of such concentrations, the generic concentrations of this Regulation (Table 3.1) or the generic concentrations of Directive 1999/45/EC (Table 3.2), are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

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

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Immediate medical attention is required.

Self-Protection of the First Aider 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

None reasonably foreseeable.

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 (CO2), dry chemical, alcohol-resistant 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
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. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

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.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

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

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

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

Technical Rules for Hazardous Substances (TRGS) 510 Class 6.1B
Storage Class (LGK) (Germany)

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 Work Exposure Limits, Fourth edition. Published 2020. **IRE -** 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC

Component	The United Kingdom	European Union	Ireland
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12	STEL: 4 mg/m³ 15 min TWA: 2 mg/m³ 8 hr STEL: 0.075 mg/m³ 15 min TWA: 0.025 mg/m³ 8 hr STEL: 0.45 mg/m³ 15 min TWA: 0.15 mg/m³ 8 hr		
Cadmium	STEL: 0.075 mg/m³ 15 min TWA: 0.025 mg/m³ 8 hr Carc. metal	TWA: 0.001 mg/m³ (8h)	TWA: 0.001 mg/m³ 8 hr. inhalable fraction TWA: 0.004 mg/m³ 8 hr. limit value 0.004 mg/m³ until 11 July 2027 inhalable fraction STEL: 0.003 mg/m³ 15 min STEL: 0.012 mg/m³ 15 min
Tin	STEL: 4 mg/m³ 15 min TWA: 2 mg/m³ 8 hr		TWA: 2 mg/m³ 8 hr. Sn STEL: 6 mg/m³ 15 min
Lead	STEL: 0.45 mg/m³ 15 min TWA: 0.15 mg/m³ 8 hr	TWA: 0.15 mg/m³ (8h)	TWA: 0.15 mg/m³ 8 hr. STEL: 0.45 mg/m³ 15 min

Biological limit values
List source(s):

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)
See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Tin 7440-31-5 (-)				DNEL = 10mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Bismuth 7440-69-9 (-)				DNEL = 13.1mg/m³
Cadmium 7440-43-9 (-)			DNEL = 4µg/m³	
Tin 7440-31-5 (-)				DNEL = 71mg/m³

Predicted No Effect Concentration (PNEC)
See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Bismuth 7440-69-9 (-)				PNEC = 17.5mg/L	
Cadmium 7440-43-9 (-)	PNEC = 0.19µg/L	PNEC = 1.8mg/kg sediment dw		PNEC = 20µg/L	PNEC = 0.9mg/kg soil dw
Lead 7439-92-1 (-)	PNEC = 2.4µg/L	PNEC = 186mg/kg sediment dw		PNEC = 100µg/L	PNEC = 212mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Cadmium 7440-43-9 (-)	PNEC = 1.14µg/L	PNEC = 0.64mg/kg sediment dw		PNEC = 0.16mg/kg food	
Lead 7439-92-1 (-)	PNEC = 3.3µg/L	PNEC = 168mg/kg sediment dw		PNEC = 10.9mg/kg food	

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
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

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

9.2. Other information

Molecular Formula	Bi . Cd . Pb . Sn
Evaporation Rate	Not applicable - Solid

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 None under normal processing.

10.4. Conditions to avoid

Incompatible products.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Toxic fumes. Heavy metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;
Oral Based on available data, the classification criteria are not met
Dermal Based on available data, the classification criteria are not met
Inhalation Category 2

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Bismuth	LD50 = 5 g/kg (Rat)	-	-
Cadmium	LD50 = 2330 mg/kg (Rat)	-	LC50 = 25 mg/m³ (Rat) 30 min
Tin	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	LC50 > 4.75 mg/L (Rat) 4 h

(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

May cause sensitization by skin contact

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

(g) reproductive toxicity;
Reproductive Effects

Category 1A
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

Kidney, Central nervous system (CNS), Blood, Liver.

(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.

Symptoms / effects,both acute and delayed

No information available.

11.2. Information on other hazards

Endocrine Disrupting Properties

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic 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
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)	EC50: = 0.0244 mg/L, 48h Static (Daphnia magna)	

	LC50: = 0.003 mg/L, 96h flow-through (Oncorhynchus mykiss)		
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)	

Component	Microtox	M-Factor
Cadmium		10

12.2. Persistence and degradability Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary

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. Endocrine disrupting properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

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 Catalog, Waste Codes are not product specific, but application specific.

Other Information Do not flush to 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
Technical Shipping Name Contains Cadmium, Lead
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
Technical Shipping Name Contains Cadmium, Lead
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
Technical Shipping Name Contains Cadmium, Lead
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. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories
Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12	76093-98-6	-	-	-	-	X	-	-	-
Bismuth	7440-69-9	231-177-4	-	-	X	X	KE-03313	X	-
Cadmium	7440-43-9	231-152-8	-	-	X	X	KE-04397	X	-
Tin	7440-31-5	231-141-8	-	-	X	X	KE-33838	X	-
Lead	7439-92-1	231-100-4	-	-	X	X	KE-21887	X	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Bismuth alloy, base, Bi 50, Pb 25,	76093-98-6	-	-	-	-	-	-	-

Cd 12, Sn 12								
Bismuth	7440-69-9	X	ACTIVE	X	-	X	X	X
Cadmium	7440-43-9	X	ACTIVE	X	-	X	X	X
Tin	7440-31-5	X	ACTIVE	X	-	X	X	X
Lead	7439-92-1	X	ACTIVE	X	-	X	X	X

Legend: X - Listed '-' - Not Listed **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	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)
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12	76093-98-6	-	Use restricted. See item 23. (see link for restriction details) Use restricted. See item 75. (see link for restriction details) Use restricted. See item 30. (see link for restriction details) Use restricted. See item 63. (see link for restriction details)	-
Bismuth	7440-69-9	-	-	-
Cadmium	7440-43-9	-	Use restricted. See item 72. (see link for restriction details) Use restricted. See item 23. (see link for restriction details) Use restricted. See item 28. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - 231-152-8 - Carcinogenic, Article 57a;Specific target organ toxicity after repeated exposure, Article 57(f) - human health
Tin	7440-31-5	-	Use restricted. See item 75. (see link for restriction details)	-
Lead	7439-92-1	-	Use restricted. See item 72. (see link for restriction details) Use restricted. See item 30. (see link for restriction details) Use restricted. See item 63. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - 231-100-4 - Toxic for reproduction (Article 57c)

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

REACH links
https://echa.europa.eu/authorisation-list
https://echa.europa.eu/substances-restricted-under-reach
https://echa.europa.eu/candidate-list-table

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12	76093-98-6	Not applicable	Not applicable
Bismuth	7440-69-9	Not applicable	Not applicable
Cadmium	7440-43-9	Not applicable	Not applicable
Tin	7440-31-5	Not applicable	Not applicable
Lead	7439-92-1	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Component	ANNEX I - PART 1 List of chemicals subject to export notification procedure (referred to in Article 8)	ANNEX I - PART 2 List of chemicals qualifying for PIC notification (referred to in Article 11)	ANNEX I - PART 3 List of chemicals subject to the PIC procedure (referred to in Articles 13 and 14)
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12 76093-98-6 (100)	i(1) — industrial chemical for professional use sr — severe restriction i(2) — industrial chemical for public sr — severe restriction	i — industrial chemical sr — severe restriction	-
Cadmium 7440-43-9 (-)	i(1) — industrial chemical for professional use sr — severe restriction i(2) — industrial chemical for public sr — severe restriction	i — industrial chemical sr — severe restriction	-
Lead 7439-92-1 (-)	sr — severe restriction i(2) — industrial chemical for public	-	-

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32012R0649&qid=1604065742303.

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

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 .
Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
Take note of Directive 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

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification Water endangering class = 3 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Bismuth	nwg	
Cadmium	WGK3	Krebserzeugende Stoffe - Class I : 0.05 mg/m³ (Massenkonzentration)
Tin	nwg	Class III : 1 mg/m³ (Massenkonzentration)
Lead	nwg	Class II : 0.5 mg/m³ (Massenkonzentration)

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

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Bismuth alloy, base, Bi 50, Pb 25, Cd 12, Sn 12 76093-98-6 (100)	Prohibited and Restricted Substances		Annex I - industrial chemical
Cadmium 7440-43-9 (-)	Prohibited and Restricted Substances		Annex I - industrial chemical
Lead 7439-92-1 (-)	Prohibited and Restricted Substances		

15.2. Chemical safety assessment

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

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H360FD - May damage fertility. May damage the unborn child
H330 - Fatal if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child
H362 - May cause harm to breast-fed children
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

TWA - Time Weighted Average
IARC - International Agency for Research on Cancer

DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic
Predicted No Effect Concentration (PNEC)
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 Compound)

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
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.

Creation Date	16-Nov-2010
Revision Date	18-Oct-2023
Revision Summary	Not applicable.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended. .

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Disclaimer

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End of Safety Data Sheet