

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

Creation Date 06-May-2010 Revision Date 09-Feb-2024 Revision Number 5

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

#### 1.1. Product identifier

Product Description: <u>Lead(II) oxide</u>

Cat No.: 10728

Synonyms C.I. 77577; Lead monooxide, Lead protoxide, Litharge; Lead(II) oxide

 Index No
 082-001-00-6

 CAS No
 1317-36-8

 EC No
 215-267-0

 Molecular Formula
 O Pb

 REACH registration number

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

Recommended Use Laboratory chemicals.

Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

**Product category** PC21 - Laboratory chemicals

Process categories PROC15 - Use as a laboratory reagent

**Environmental release category** ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Uses advised against No Information available

#### 1.3. Details of the supplier of the safety data sheet

Company

Avocado Research Chemicals Ltd. (Part of Thermo Fisher Scientific)

Shore Road, Heysham Lancashire, LA3 2XY, United Kingdom

Office Tel: +44 (0) 1524 850506 Office Fax: +44 (0) 1524 850608

**E-mail address** begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **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 - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

**Physical hazards** 

Lead(II) oxide Revision Date 09-Feb-2024

Based on available data, the classification criteria are not met

#### **Health hazards**

Acute oral toxicity

Acute Inhalation Toxicity - Dusts and Mists

Carcinogenicity

Category 4 (H332)

Category 2 (H351)

Reproductive Toxicity

Category 2 (H331)

Category 1A (H360Df)

Effects on or via lactation

/ Effects on or via lactation

Specific target organ toxicity - (repeated exposure)

Category 1 (H372)

**Environmental hazards** 

Acute aquatic toxicity

Chronic aquatic toxicity

Category 1 (H400)

Category 1 (H410)

Full text of Hazard Statements: see section 16

## 2.2. Label elements



Signal Word

Danger

## **Hazard Statements**

H351 - Suspected of causing cancer

H360Df - May damage the unborn child. Suspected of damaging fertility

H362 - May cause harm to breast-fed children

H372 - Causes damage to organs through prolonged or repeated exposure

H410 - Very toxic to aquatic life with long lasting effects

H302 + H332 - Harmful if swallowed or if inhaled

## **Precautionary Statements**

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P312 - Call a POISON CENTER or doctor if you feel unwell

P264 - Wash face, hands and any exposed skin thoroughly after handling

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P280 - Wear protective gloves/protective clothing/eye protection/face protection

## 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Page 2/12

Lead(II) oxide Revision Date 09-Feb-2024

#### 3.1. Substances

| Component     | CAS No    | EC No             | Weight % | CLP Classification - According to<br>GB-CLP Regulations UK SI 2019/720 and<br>UK SI 2020/1567  |
|---------------|-----------|-------------------|----------|--|
| Lead monoxide | 1317-36-8 | EEC No. 215-267-0 | <=100    | Acute Tox. 4 (H302) Acute Tox. 4 (H332) Repr. 1A (H360Df) Lact. (H362) STOT RE 1 (H372) Carc. 2 (H351) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) |

|   | Component     | Specific concentration limits (SCL's) | M-Factor    | Component notes |
|---|---------------|---------------------------------------|-------------|-----------------|
| Ī | Lead monoxide | Repr. 2 (H361f) :: C>=2.5%            | 10 (acute)  | -               |
| ١ |               | STOT RE 2 (H373) :: C>=0.5%           | 1 (Chronic) |                 |

#### 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

| DEVCH | registration | numbar |
|-------|--------------|--------|
|       |              |        |

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**

Lead(II) oxide Revision Date 09-Feb-2024

#### 5.1. Extinguishing media

#### **Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. 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

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. Do not allow run-off from fire-fighting to enter drains or water courses.

#### **Hazardous Combustion Products**

Thermal decomposition can lead to release of irritating gases and vapors, lead 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

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.

#### 7.2. Conditions for safe storage, including any incompatibilities

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

Technical Rules for Hazardous Substances (TRGS) 510 Class 6.1C

\_\_\_\_\_

Lead(II) oxide Revision Date 09-Feb-2024

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.

| Component     | The United Kingdom                  | European Union | Ireland |
|---------------|-------------------------------------|----------------|---------|
| Lead monoxide | STEL: 0.45 mg/m <sup>3</sup> 15 min |                |         |
|               | TWA: 0.15 mg/m <sup>3</sup> 8 hr    |                |         |

## **Biological limit values**

List source(s):

## Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

No information available

## **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** Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection Protective gloves

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

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)

Lead(II) oxide Revision Date 09-Feb-2024

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 Yellow Odor Odorless

Odor ThresholdNo data availableMelting Point/Range886 °C / 1626.8 °FSoftening PointNo data availableBoiling Point/Range1470 °C / 2678 °F

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 TemperatureNo data availableDecomposition TemperatureNo data available

 pH
 9.9 @ 20°C
 100 g/L

 Viscosity
 Not applicable
 Solid

 Water Solubility
 70 mg/L (20°C)

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Vapor Pressure10 mmHg @ 1085 °CDensity / Specific GravityNo data availableBulk DensityNo data available

Vapor Density Not applicable Solid

Particle characteristics No data available

## 9.2. Other information

Molecular FormulaO PbMolecular Weight223.19

Evaporation Rate Not applicable - Solid

Lead(II) oxide Revision Date 09-Feb-2024

## **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. Excess heat.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors. lead oxides.

## **SECTION 11: TOXICOLOGICAL INFORMATION**

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

#### **Product Information**

(a) acute toxicity;

OralNo data availableDermalNo data availableInhalationNo data available

| Component     | LD50 Oral                  | LD50 Dermal               | LC50 Inhalation            |
|---------------|----------------------------|---------------------------|----------------------------|
| Lead monoxide | LD50 > 10000 mg/kg (Rat)   | LD50 > 2000 mg/kg (Rat)   | LC50 > 5.05 mg/L (Rat) 4 h |
| Lead monoxide | LD50 > 10000 mg/kg ( Rat ) | LD50 > 2000 mg/kg ( Rat ) | LC50 > 5.05 m              |

(b) skin corrosion/irritation; No data available

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

(d) respiratory or skin sensitization;

**Respiratory Skin**No data available
No data available

No information available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

The table below indicates whether each agency has listed any ingredient as a carcinogen

| Component     | EU | UK | Germany | IARC     |
|---------------|----|----|---------|----------|
| Lead monoxide |    |    |         | Group 2A |

Lead(II) oxide Revision Date 09-Feb-2024

(g) reproductive toxicity; No data available

Reproductive Effects Possible risk of impaired fertility. May cause harm to the unborn child. **Developmental Effects** 

(h) STOT-single exposure; No data available

No data available (i) STOT-repeated exposure;

**Target Organs** Blood, Central Nervous System (CNS), Peripheral Nervous System (PNS), Kidney.

(j) aspiration hazard; Not applicable

Solid

Symptoms / effects.both acute and No information available.

delayed

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

The product contains following substances which are hazardous for the environment. Very **Ecotoxicity effects** 

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 |
|---------------|-------------------------------|--------------------|------------------|
| Lead monoxide | Pimephales promelas: LC50=0.3 | EC50=0.13 mg/L 48h |                  |
|               | mg/L 96h                      | _                  |                  |

| Component     | Microtox | M-Factor    |
|---------------|----------|-------------|
| Lead monoxide |          | 10 (acute)  |
|               |          | 1 (Chronic) |

12.2. Persistence and degradability Product contains heavy metals. Discharge into the environment must be avoided. Special

pre-treatment is necessary

**Persistence** May persist, based on information available. Degradability Not relevant for inorganic substances.

Contains substances known to be hazardous to the environment or not degradable in waste Degradation in sewage

treatment plant water treatment plants.

May have some potential to bioaccumulate 12.3. Bioaccumulative potential

Spillage unlikely to penetrate soil The product is water soluble, and may spread in water 12.4. Mobility in soil

systems Is not likely mobile in the environment due its low water solubility. Will likely be

mobile in the environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent assessment

and very bioaccumulative (vPvB).

Lead(II) oxide Revision Date 09-Feb-2024

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 Ozone Depletion Potential** 

This product does not contain any known or suspected substance 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.

According to the European Waste Catalog, Waste Codes are not product specific, but **European Waste Catalogue (EWC)** 

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 UN3077

14.2. UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

**Technical Shipping Name** Lead (II) oxide

14.3. Transport hazard class(es)

14.4. Packing group Ш

ADR

14.1. UN number UN3077

14.2. UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

**Technical Shipping Name** Lead (II) oxide

14.3. Transport hazard class(es) 14.4. Packing group

Ш

IATA

UN3077 14.1. UN number

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 14.2. UN proper shipping name

**Technical Shipping Name** Lead (II) oxide

14.3. Transport hazard class(es) 9

14.4. Packing group Ш

14.5. Environmental hazards Dangerous for the environment

Lead(II) oxide Revision Date 09-Feb-2024

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  |
|---------------|-----------|-----------|---------------------------|--------------------|-------|------|----------|-------|-------|
| Lead monoxide | 1317-36-8 | 215-267-0 | 1                         | -                  | X     | X    | KE-21926 | X     | X     |
|               |           |           |                           |                    |       |      |          |       |       |
| Component     | CAS No    | TSCA      | notific                   | ventory<br>ation - | DSL   | NDSL | AICS     | NZIoC | PICCS |
| Lead monoxide | 1317-36-8 | Х         | Active-Inactive<br>ACTIVE |                    | Х     | -    | Х        | Х     | Х     |

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) -<br>Annex XIV - Substances<br>Subject to Authorization |   | REACH Regulation (EC<br>1907/2006) article 59 -<br>Candidate List of<br>Substances of Very High<br>Concern (SVHC) |
|---------------|-----------|---|---|---|
| Lead monoxide | 1317-36-8 | -   | 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 -<br>Toxic for reproduction<br>(Article 57 c)   |

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) -      | Seveso III Directive (2012/18/EC) -     |
|---------------|-----------|--|---|
|               |           | Qualifying Quantities for Major Accident | Qualifying Quantities for Safety Report |
|               |           | Notification                             | Requirements                            |
| Lead monoxide | 1317-36-8 | 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

\_\_\_\_\_

Lead(II) oxide Revision Date 09-Feb-2024

#### 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 3 List of chemicals subject to the PIC procedure (referred to in Articles 13 and 14) |
|--------------------------------------|--|---|---|
| Lead monoxide<br>1317-36-8 ( <=100 ) | 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 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

#### **National Regulations**

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

#### WGK Classification See table for values

| Component     | Germany - Water Classification (AwSV) | Germany - TA-Luft Class |
|---------------|---------------------------------------|-------------------------|
| Lead monoxide | WGK3                                  |                         |

| Component     | France - INRS (Tables of occupational diseases)     |  |
|---------------|---|--|
| Lead monoxide | Tableaux des maladies professionnelles (TMP) - RG 1 |  |

| Component                            | Switzerland - Ordinance on the<br>Reduction of Risk from<br>handling of hazardous<br>substances preparation (SR<br>814.81) | Switzerland - Ordinance on<br>Incentive Taxes on Volatile<br>Organic Compounds (OVOC) | Switzerland - Ordinance of the<br>Rotterdam Convention on the<br>Prior Informed Consent<br>Procedure |
|--------------------------------------|--|---|--|
| Lead monoxide<br>1317-36-8 ( <=100 ) | Prohibited and Restricted Substances   |   |  |

## 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## **SECTION 16: OTHER INFORMATION**

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

H302 - Harmful if swallowed

H332 - Harmful if inhaled

H351 - Suspected of causing cancer

H360Df - May damage the unborn child. Suspected of damaging fertility

H362 - May cause harm to breast-fed children

H372 - Causes damage to organs through prolonged or repeated exposure

H400 - Very toxic to aquatic life

Lead(II) oxide Revision Date 09-Feb-2024

H410 - Very toxic to aquatic life with long lasting effects

#### Legend

**CAS** - Chemical Abstracts Service

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

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic

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 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

VOC - (Volatile Organic Compound)

IARC - International Agency for Research on Cancer

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

Shins ATE - Acute Toxicity Estimate

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

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

#### **Training Advice**

Chemical incident response training.

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and

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.

**Prepared By** Health, Safety and Environmental Department

**Creation Date** 06-May-2010 **Revision Date** 09-Feb-2024

**Revision Summary** New emergency telephone response service provider.

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

#### **Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

## **End of Safety Data Sheet**