

Creation Date 09-Nov-2010

Revision Date 01-Feb-2024

Revision Number 3

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

### 1.1. Product identifier

|                           |                                         |
|---------------------------|-----------------------------------------|
| Product Description:      | <b>Bromoacetaldehyde diethyl acetal</b> |
| Cat No. :                 | <b>A13276</b>                           |
| Synonyms                  | 2-Bromo-1,1-diethoxyethane; Bromoacetal |
| CAS No                    | 2032-35-1                               |
| EC No                     | 217-989-1                               |
| Molecular Formula         | C6 H13 Br O2                            |
| 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.<br>(Part of Thermo Fisher Scientific)<br>Shore Road, Heysham<br>Lancashire, LA3 2XY,<br>United Kingdom<br>Office Tel: +44 (0) 1524 850506<br>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

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Based on available data, the classification criteria are not met

## Health hazards

Acute oral toxicity  
Acute Inhalation Toxicity - Vapors  
Skin Corrosion/Irritation  
Serious Eye Damage/Eye Irritation

Category 3 (H301)  
Category 2 (H330)  
Category 2 (H315)  
Category 2 (H319)

## Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

## 2.2. Label elements



Signal Word

Danger

## Hazard Statements

H301 - Toxic if swallowed  
H330 - Fatal if inhaled  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
Combustible liquid

## Precautionary Statements

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P310 - Immediately call a POISON CENTER or doctor/physician  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P332 + P313 - If skin irritation occurs: Get medical advice/attention  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

## 2.3. Other hazards

Lachrymator (substance which increases the flow of tears)  
Toxic to terrestrial vertebrates  
This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

| Component                     | CAS No    | EC No             | Weight % | CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567   |
|-------------------------------|-----------|-------------------|----------|-------------------------------------------------------------------------------------------|
| Ethane, 2-bromo-1,1-diethoxy- | 2032-35-1 | EEC No. 217-989-1 | >95      | Skin Irrit. 2 (H315)<br>Eye Irrit. 2 (H319)<br>Acute Tox. 3 (H301)<br>Acute Tox. 2 (H330) |

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-

Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

|                                           |                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General Advice</b>                     | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.                                                                                                                                                                                                                              |
| <b>Eye Contact</b>                        | In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.                                                                                                                                                                                                                              |
| <b>Skin Contact</b>                       | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.                                                                                                                                                                                                                    |
| <b>Ingestion</b>                          | Do NOT induce vomiting. Call a physician or poison control center immediately.                                                                                                                                                                                                                                                 |
| <b>Inhalation</b>                         | 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. |
| <b>Self-Protection of the First Aider</b> | 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

. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

### 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<sub>2</sub>), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

#### Extinguishing media which must not be used for safety reasons

No information available.

### 5.2. Special hazards arising from the substance or mixture

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air. Combustible material.

#### Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Hydrogen bromide.

### 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

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## **6.1. Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

## **6.2. Environmental precautions**

Should not be released into the environment.

## **6.3. Methods and material for containment and cleaning up**

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition.

## **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. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition.

#### **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**

Flammables area. Keep away from heat, sparks and flame. Protect from direct sunlight. Keep container tightly closed in a dry and well-ventilated place. To maintain product quality: Keep refrigerated.

**Technical Rules for Hazardous Substances (TRGS) 510**      Class 6.1A  
**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**

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

#### **Biological limit values**

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

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## 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 explosion-proof electrical/ventilating/lighting equipment. Ensure adequate ventilation, especially in confined areas. 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        |
|----------------|-------------------|-----------------|-------------|-----------------------|
| Nitrile rubber | See manufacturers | -               | EN 374      | (minimum requirement) |
| Neoprene       | recommendations   |                 |             |                       |
| Natural rubber |                   |                 |             |                       |
| 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)

Ensure gloves are suitable for the task: Chemical compatibility, 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:** Organic gases and vapours filter Type A Brown conforming to EN14387

#### 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:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

#### Environmental exposure controls

No information available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

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|                                         |                               |                                   |
|-----------------------------------------|-------------------------------|-----------------------------------|
| Physical State                          | Liquid                        |                                   |
| Appearance                              | Light yellow                  |                                   |
| Odor                                    | No information available      |                                   |
| Odor Threshold                          | No data available             |                                   |
| Melting Point/Range                     | No data available             |                                   |
| Softening Point                         | No data available             |                                   |
| Boiling Point/Range                     | 66 - 67 °C / 150.8 - 152.6 °F | @ 18 mmHg                         |
| Flammability (liquid)                   | Combustible liquid            | On basis of test data             |
| Flammability (solid,gas)                | Not applicable                | Liquid                            |
| Explosion Limits                        | No data available             |                                   |
| Flash Point                             | 61 °C / 141.8 °F              | Method - No information available |
| Autoignition Temperature                | No data available             |                                   |
| Decomposition Temperature               | No data available             |                                   |
| pH                                      | No information available      |                                   |
| Viscosity                               | No data available             |                                   |
| Water Solubility                        | Immiscible                    |                                   |
| Solubility in other solvents            | No information available      |                                   |
| Partition Coefficient (n-octanol/water) |                               |                                   |
| Vapor Pressure                          | No data available             |                                   |
| Density / Specific Gravity              | 1.280                         |                                   |
| Bulk Density                            | Not applicable                | Liquid                            |
| Vapor Density                           | No data available             | (Air = 1.0)                       |
| Particle characteristics                | Not applicable (liquid)       |                                   |

## 9.2. Other information

|                      |                                        |
|----------------------|----------------------------------------|
| Molecular Formula    | C6 H13 Br O2                           |
| Molecular Weight     | 197.07                                 |
| Explosive Properties | explosive air/vapour mixtures possible |

## SECTION 10: STABILITY AND REACTIVITY

|                  |                                            |
|------------------|--------------------------------------------|
| 10.1. Reactivity | None known, based on information available |
|------------------|--------------------------------------------|

|                          |                                      |
|--------------------------|--------------------------------------|
| 10.2. Chemical stability | Light sensitive. Moisture sensitive. |
|--------------------------|--------------------------------------|

## 10.3. Possibility of hazardous reactions

|                          |                               |
|--------------------------|-------------------------------|
| Hazardous Polymerization | No information available.     |
| Hazardous Reactions      | None under normal processing. |

## 10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Exposure to light.  
Incompatible products. Exposure to moist air or water.

## 10.5. Incompatible materials

Acids. Oxidizing agent.

## 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen bromide.

## SECTION 11: TOXICOLOGICAL INFORMATION

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

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## Product Information

### (a) acute toxicity;

Oral

Category 3

Dermal

Based on available data, the classification criteria are not met

Inhalation

Category 2

| Component                     | LD50 Oral       | LD50 Dermal | LC50 Inhalation    |
|-------------------------------|-----------------|-------------|--------------------|
| Ethane, 2-bromo-1,1-diethoxy- | 233 mg/kg (Rat) | -           | 0.61 mg/L/4h (Rat) |

### (b) skin corrosion/irritation;

Category 2

### (c) serious eye damage/irritation;

Category 2

### (d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

### (e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

### (f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

### (g) reproductive toxicity;

Based on available data, the classification criteria are not met

### (h) STOT-single exposure;

Based on available data, the classification criteria are not met

### (i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

Target Organs

None known.

### (j) aspiration hazard;

Based on available data, the classification criteria are not met

### Other Adverse Effects

The toxicological properties have not been fully investigated.

### Symptoms / effects, both acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

## 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

Do not empty into drains.

### 12.2. Persistence and degradability

#### Persistence

Persistence is unlikely, based on information available.

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|                                                                                                        |                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>12.3. Bioaccumulative potential</u></b>                                                          | Bioaccumulation is unlikely                                                                                                                                                                    |
| <b><u>12.4. Mobility in soil</u></b>                                                                   | The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air. |
| <b><u>12.5. Results of PBT and vPvB assessment</u></b>                                                 | No data available for assessment.                                                                                                                                                              |
| <b><u>12.6. Endocrine disrupting properties</u></b><br>Endocrine Disruptor Information                 | This product does not contain any known or suspected endocrine disruptors.                                                                                                                     |
| <b><u>12.7. Other adverse effects</u></b><br>Persistent Organic Pollutant<br>Ozone Depletion Potential | This product does not contain any known or suspected substance.<br>This product does not contain any known or suspected substance.                                                             |

## SECTION 13: DISPOSAL CONSIDERATIONS

### **13.1. Waste treatment methods**

|                                            |                                                                                                                                                                                                                                          |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste from Residues/Unused Products</b> | 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.                                                                   |
| <b>Contaminated Packaging</b>              | Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition. |
| <b>European Waste Catalogue (EWC)</b>      | According to the European Waste Catalog, Waste Codes are not product specific, but application specific.                                                                                                                                 |
| <b>Other Information</b>                   | Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains.        |

## SECTION 14: TRANSPORT INFORMATION

### **IMDG/IMO**

|                                                |                               |
|------------------------------------------------|-------------------------------|
| <b><u>14.1. UN number</u></b>                  | UN2810                        |
| <b><u>14.2. UN proper shipping name</u></b>    | Toxic liquid, organic, n.o.s. |
| <b><u>Technical Shipping Name</u></b>          | Ethane, 2-bromo-1,1-diethoxy- |
| <b><u>14.3. Transport hazard class(es)</u></b> | 6.1                           |
| <b><u>14.4. Packing group</u></b>              | II                            |

### **ADR**

|                                                |                               |
|------------------------------------------------|-------------------------------|
| <b><u>14.1. UN number</u></b>                  | UN2810                        |
| <b><u>14.2. UN proper shipping name</u></b>    | Toxic liquid, organic, n.o.s. |
| <b><u>Technical Shipping Name</u></b>          | Ethane, 2-bromo-1,1-diethoxy- |
| <b><u>14.3. Transport hazard class(es)</u></b> | 6.1                           |
| <b><u>14.4. Packing group</u></b>              | II                            |

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## IATA

**14.1. UN number** UN2810  
**14.2. UN proper shipping name** Toxic liquid, organic, n.o.s.  
**Technical Shipping Name** Ethane, 2-bromo-1,1-diethoxy-  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

**14.5. Environmental hazards** No hazards identified

**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 |
|-------------------------------|-----------|-----------|--------|-----|-------|------|----------|------|------|
| Ethane, 2-bromo-1,1-diethoxy- | 2032-35-1 | 217-989-1 | -      | -   | X     | X    | KE-03650 | X    | X    |

| Component                     | CAS No    | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | AICS | NZIoC | PICCS |
|-------------------------------|-----------|------|-----------------------------------------------|-----|------|------|-------|-------|
| Ethane, 2-bromo-1,1-diethoxy- | 2032-35-1 | X    | ACTIVE                                        | -   | 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

Not applicable

| 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) |
|-------------------------------|-----------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Ethane, 2-bromo-1,1-diethoxy- | 2032-35-1 | -                                                                   | -                                                                             | -                                                                                                     |

#### 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 |
|-------------------------------|-----------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Ethane, 2-bromo-1,1-diethoxy- | 2032-35-1 | 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

Not applicable

#### 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 .

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## 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)

## 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

H301 - Toxic if swallowed

H330 - Fatal if inhaled

H315 - Causes skin irritation

H319 - Causes serious eye irritation

### 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/NDL** - 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 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

### Key literature references and sources for data

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

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

**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)

## 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.

**Prepared By**  
**Creation Date**

Health, Safety and Environmental Department  
09-Nov-2010

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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**