

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

1.1. Product identifier

Product Description: Graphite conductive adhesive, aqueous based
Cat No. : 42466

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
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

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

GHS 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

Serious Eye Damage/Eye Irritation

Category 2 (H319)

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Specific target organ toxicity - (single exposure)

Category 3 (H335)

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

Warning

Hazard Statements

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

Precautionary Statements

P280 - Wear eye protection/ face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

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

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

2.3. Other hazards

This product does not contain any known or suspected endocrine disruptors

Toxic to terrestrial vertebrates

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

| Component | CAS No | EC No | Weight % | GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567 |
|-----------------|-----------|-------------------|----------|---|
| Water | 7732-18-5 | 231-791-2 | 75.00 | - |
| Graphite | 7782-42-5 | EEC No. 231-955-3 | 20 | Eye Irrit. 2 (H319) STOT SE 3 (H335) |
| Carbon black | 1333-86-4 | 215-609-9 | 3.00 | - |
| 2-Butoxyethanol | 111-76-2 | EEC No. 203-905-0 | 2.00 | Acute Tox. 4 (H302) Acute Tox. 3 (H331) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) |

| Component | ECHA (RAC) ATE (Oral) | ECHA (RAC) ATE (Dermal) | ECHA (RAC) ATE (Inhalation) |
|-----------------|-----------------------|-------------------------|-----------------------------|
| 2-Butoxyethanol | ATE = 1200 mg/kg bw | - | ATE = 3 mg/L (vapour) |

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ECHA (RAC) - Committee for Risk Assessment - European CHemicals Agency
ATE - Acute Toxicity Estimate; mg/kg bw - milligrams per kilogram of body weight

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

| | |
|---|---|
| General Advice | If symptoms persist, call a physician. |
| Eye Contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. |
| Inhalation | Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. |
| Self-Protection of the First Aider | No special precautions required. |

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

Carbon dioxide (CO₂). Powder. Water spray. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

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.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂).

5.3. Advice for firefighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

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6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required.

6.2. Environmental precautions

Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

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. Ensure adequate ventilation. Avoid ingestion and inhalation. Do not get in eyes, on skin, or on clothing.

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

Technical Rules for Hazardous Substances (TRGS) 510 Class 10
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): **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 **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

| Component | The United Kingdom | European Union | Ireland |
|--------------|---|----------------|---|
| Graphite | STEL: 30 mg/m ³ 15 min STEL: 12 mg/m ³ 15 min TWA: 10 mg/m ³ 8 hr TWA: 4 mg/m ³ 8 hr | | TWA: 2 mg/m ³ 8 hr. all forms except fibres; respirable fraction STEL: 6 mg/m ³ 15 min |
| Carbon black | STEL: 7 mg/m ³ 15 min | | TWA: 3 mg/m ³ 8 hr. |

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| | | | |
|-----------------|--|---|---|
| | TWA: 3.5 mg/m ³ 8 hr | | inhalable fraction STEL: 15 mg/m ³ 15 min |
| 2-Butoxyethanol | STEL: 50 ppm 15 min STEL: 246 mg/m ³ 15 min TWA: 25 ppm 8 hr TWA: 123 mg/m ³ 8 hr Skin | TWA: 20 ppm (8h) TWA: 98 mg/m ³ (8h) STEL: 50 ppm (15min) STEL: 246 mg/m ³ (15min) Skin | TWA: 20 ppm 8 hr. TWA: 98 mg/m ³ 8 hr. STEL: 50 ppm 15 min STEL: 246 mg/m ³ 15 min Skin |

Biological limit values

List source(s): **UK** - Biological Monitoring Guidance Values provided by the UK's Health and Safety Executive (HSE) Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended) and EH40/2005.

| Component | United Kingdom | European Union |
|-----------------|--|----------------|
| 2-Butoxyethanol | Butoxyacetic acid: 240 mmol/mol creatinine urine post shift | |

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) |
|--------------------------------------|---------------------------------|------------------------------------|-----------------------------------|--------------------------------------|
| 2-Butoxyethanol 111-76-2 (2.00) | | DNEL = 89mg/kg bw/day | | DNEL = 125mg/kg bw/day |

| Component | Acute effects local (Inhalation) | Acute effects systemic (Inhalation) | Chronic effects local (Inhalation) | Chronic effects systemic (Inhalation) |
|--------------------------------------|-------------------------------------|--|---------------------------------------|--|
| Graphite 7782-42-5 (20) | | | DNEL = 1.2mg/m ³ | DNEL = 1.2mg/m ³ |
| Carbon black 1333-86-4 (3.00) | | | DNEL = 0.5mg/m ³ | DNEL = 1mg/m ³ |
| 2-Butoxyethanol 111-76-2 (2.00) | DNEL = 246mg/m ³ | DNEL = 1091mg/m ³ | | DNEL = 98mg/m ³ |

Predicted No Effect Concentration (PNEC)

See values below.

| Component | Fresh water | Fresh water sediment | Water Intermittent | Microorganisms in sewage treatment | Soil (Agriculture) |
|--------------------------------------|----------------|---------------------------------|--------------------|---------------------------------------|-----------------------------|
| 2-Butoxyethanol 111-76-2 (2.00) | PNEC = 8.8mg/L | PNEC = 34.6mg/kg sediment dw | PNEC = 26.4mg/L | PNEC = 463mg/L | PNEC = 2.33mg/kg soil dw |

| Component | Marine water | Marine water sediment | Marine water intermittent | Food chain | Air |
|--------------------------------------|-----------------|---------------------------------|------------------------------|-------------------------|-----|
| 2-Butoxyethanol 111-76-2 (2.00) | PNEC = 0.88mg/L | PNEC = 3.46mg/kg sediment dw | | PNEC = 0.02g/kg food | |

8.2. Exposure controls

Engineering Measures

None under normal use conditions. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye Protection

Goggles (European standard - EN 166)

Hand Protection

Protective gloves

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| 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 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 No protective equipment is needed under normal use conditions.

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: Particle filter

Small scale/Laboratory use Maintain adequate ventilation
Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| | | |
|--|--------------------------|--|
| Physical State | Liquid | |
| Appearance | Black | |
| Odor | sweet | |
| Odor Threshold | No data available | |
| Melting Point/Range | No data available | |
| Softening Point | No data available | |
| Boiling Point/Range | 100 °C / 212 °F | |
| Flammability (liquid) | No data available | |
| Flammability (solid,gas) | Not applicable | Liquid |
| 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 | Not applicable | |
| Viscosity | No data available | |
| Water Solubility | Miscible | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Component | log Pow | |
| 2-Butoxyethanol | 0.81 | |
| Vapor Pressure | 23 hPa @ 20 °C | |
| Density / Specific Gravity | 1.16 g/cm3 | @ 20 °C |
| Bulk Density | Not applicable | Liquid |
| Vapor Density | No data available | (Air = 1.0) |
| Particle characteristics | Not applicable (liquid) | |

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9.2. Other information

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

No information available.

Hazardous Reactions

None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂).

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

Based on available data, the classification criteria are not met

Toxicology data for the components

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-----------------|----------------------------|--|--|
| Water | - | - | - |
| Graphite | - | - | LC50 > 2000 mg/m ³ (Rat) 4 h |
| Carbon black | LD50 > 15400 mg/kg (Rat) | LD50 > 3 g/kg (Rabbit) | LC50 > 4.6 mg/m ³ (Rat) 4 h |
| 2-Butoxyethanol | 1746 mg/kg (Rat) | LD50 > 2000 mg/kg (Guinea pig) OCED 402 | LC50 = 486 ppm (Rat) 4 h LC50 = 450 ppm (Rat) 4 h |

| Component | ECHA (RAC) ATE (Oral) | ECHA (RAC) ATE (Dermal) | ECHA (RAC) ATE (Inhalation) |
|-----------------|-----------------------|-------------------------|-----------------------------|
| 2-Butoxyethanol | ATE = 1200 mg/kg bw | - | ATE = 3 mg/L (vapour) |

ECHA (RAC) - Committee for Risk Assessment - European CHemicals Agency
ATE - Acute Toxicity Estimate; mg/kg bw - milligrams per kilogram of body weight

(b) skin corrosion/irritation;

No data available

(c) serious eye damage/irritation;

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(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

| Component | Test method | Test species | Study result |
|--------------------------------------|--|--------------|-------------------|
| 2-Butoxyethanol 111-76-2 (2.00) | Guinea Pig Maximisation Test (GPMT) | guinea pig | - non-sensitising |

(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 |
|--------------|----|----|---------|----------|
| Carbon black | | | Cat. 3B | Group 2B |

(g) reproductive toxicity; No data available

(h) STOT-single exposure; Category 3

Results / Target organs Respiratory system.

(i) STOT-repeated exposure; No data available

Target Organs None known.

(j) aspiration hazard; No data available

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

| Component | Freshwater Fish | Water Flea | Freshwater Algae |
|-----------------|--|--|----------------------|
| Graphite | LC50: > 100 mg/L, 96h semi-static (Danio rerio) | | |
| Carbon black | | EC50: > 5600 mg/L, 24h (Daphnia magna) | |
| 2-Butoxyethanol | 1490 mg/L LC50 96 h 2950 mg/L LC50 96 h | 1550 mg/l EC50 48 hr >1000 mg/L EC50 48 h 1698 - 1940 mg/L EC50 24 h | 1840 mg/l EC50 72 hr |

12.2. Persistence and degradability

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| | | |
|--------------------|---|----------------------|
| Persistence | Miscible with water, Persistence is unlikely, based on information available. | |
| | Component | Degradability |
| | 2-Butoxyethanol 111-76-2 (2.00) | 90% (28d) OECD 301B |

12.3. Bioaccumulative potential Bioaccumulation is unlikely

| | | |
|------------------|----------------|--------------------------------------|
| Component | log Pow | Bioconcentration factor (BCF) |
| 2-Butoxyethanol | 0.81 | No data available |

12.4. Mobility in soil The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

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 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 Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

ADR Not regulated

14.1. UN number
14.2. UN proper shipping name

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14.3. Transport hazard class(es)

14.4. Packing group

IATA

Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

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

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

| Component | CAS No | EINECS | ELINCS | NLP | IECSC | TCSI | KECL | ENCS | ISHL |
|-----------------|-----------|-----------|-----------|-----|-------|------|----------|------|------|
| Water | 7732-18-5 | 231-791-2 | - | - | X | X | KE-35400 | X | - |
| Graphite | 7782-42-5 | 231-955-3 | - | - | X | X | KE-18101 | - | - |
| Carbon black | 1333-86-4 | 215-609-9 | 435-640-3 | - | X | X | X | X | X |
| 2-Butoxyethanol | 111-76-2 | 203-905-0 | - | - | X | X | KE-04134 | X | X |

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | AICS | NZIoC | PICCS |
|-----------------|-----------|------|---|-----|------|------|-------|-------|
| Water | 7732-18-5 | X | ACTIVE | X | - | X | X | X |
| Graphite | 7782-42-5 | X | ACTIVE | X | - | X | X | X |
| Carbon black | 1333-86-4 | X | ACTIVE | X | - | X | X | X |
| 2-Butoxyethanol | 111-76-2 | 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) |
|-----------------|-----------|---|---|---|
| Water | 7732-18-5 | - | - | - |
| Graphite | 7782-42-5 | - | - | - |
| Carbon black | 1333-86-4 | - | Use restricted. See entry 75. (see link for restriction details) | - |
| 2-Butoxyethanol | 111-76-2 | - | Use restricted. See entry 75. (see link for restriction details) | - |

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REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

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 |
|-----------------|-----------|---|--|
| Water | 7732-18-5 | Not applicable | Not applicable |
| Graphite | 7782-42-5 | Not applicable | Not applicable |
| Carbon black | 1333-86-4 | Not applicable | Not applicable |
| 2-Butoxyethanol | 111-76-2 | 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 .

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

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 |
|-----------------|---------------------------------------|-------------------------|
| Graphite | nwg | |
| Carbon black | nwg | |
| 2-Butoxyethanol | WGK1 | |

| Component | France - INRS (Tables of occupational diseases) |
|-----------------|--|
| Graphite | Tableaux des maladies professionnelles (TMP) - RG 16 Tableaux des maladies professionnelles (TMP) - RG 25 |
| Carbon black | Tableaux des maladies professionnelles (TMP) - RG 16,RG 16bis |
| 2-Butoxyethanol | Tableaux des maladies professionnelles (TMP) - RG 84 |

| 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 |
|--------------------------------------|--|---|--|
| 2-Butoxyethanol 111-76-2 (2.00) | | Group I | |

15.2. Chemical safety assessment

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

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SECTION 16: OTHER INFORMATION

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

H319 - Causes serious eye irritation
H302 - Harmful if swallowed
H315 - Causes skin irritation
H331 - Toxic if inhaled
H335 - May cause respiratory 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/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer
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)

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.

Prepared By Health, Safety and Environmental Department

Revision Date 30-Nov-2024

Revision Summary SDS sections updated.

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

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End of Safety Data Sheet