SAFETY DATA SHEET
DOWCAL 100 & SOLUTIONS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name DOWCAL 100 & SOLUTIONS

Product number 45662

Synonyms; trade names DOWCAL 100 30%, DOWCAL 100 35%, DOWCAL 100 40%, DOWCAL 100 45%, DOWCAL 100 50%, DOWCAL 100 55% RED SOL, DOWCAL 100, DOWCAL 100 LB 21 LIGHT BLUE, DOWCAL 100 39%, DOWCAL 100 44%, DOWCAL 100 47%, DOWCAL 100 55%, DOWCAL 100 65% LIGHT BLUE, DOWCAL 100 LIGHT BLUE, DOWCAL 100 25%

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

Identified uses Coolant

1.3. Details of the supplier of the safety data sheet

Supplier

Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
BD3 7AY
+44 1274 267300
+44 1274 267306
SDS.EMEA@univarsolutions.com

1.4. Emergency telephone number

Emergency telephone SGS - +32 (0)3 575 55 55 (24h)

Sds No. 45662

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

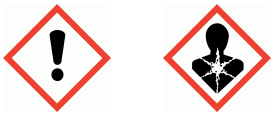
Physical hazards Not Classified

Health hazards Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT RE 2 - H373

Environmental hazards Not Classified

2.2. Label elements

Hazard pictograms



Signal word Warning

DOWCAL 100 & SOLUTIONS

Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
P260 Do not breathe vapour/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container in accordance with national regulations.

Contains
ETHANEDIOL

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

ETHANEDIOL **25 - 96**

CAS number: 107-21-1 EC number: 203-473-3 REACH registration number: 01-2119456816-28-XXXX

Classification
Acute Tox. 4 - H302
STOT RE 2 - H373

SEBACIC ACID **5-10%**

CAS number: 111-20-6 EC number: 203-845-5

Classification
Not Classified

SODIUM BENZOATE **5-10%**

CAS number: 532-32-1 EC number: 208-534-8 REACH registration number: 01-2119460683-35-XXXX

Classification
Eye Irrit. 2 - H319

WATER **5-10%**

CAS number: 7732-18-5 EC number: 231-791-2

Classification
Not Classified

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BORON POTASSIUM OXIDE TETRAHYDRATE		1-5%
CAS number: 12045-78-2	EC number: 215-575-5	REACH registration number: 01-2119970730-37-XXXX

Classification
Repr. 2 - H361d

SODIUM HYDROXIDE		< 2
CAS number: 1310-73-2	EC number: 215-185-5	REACH registration number: 01-2119457892-27-XXXX

Classification
Met. Corr. 1 - H290
Skin Corr. 1A - H314
Eye Dam. 1 - H318

The full text for all hazard statements is displayed in Section 16.

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Move affected person to fresh air at once. Get medical attention if any discomfort continues.

Ingestion Get medical attention immediately. Rinse mouth thoroughly with water.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

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

Ingestion Causes damage to organs through prolonged or repeated exposure if swallowed. Harmful if swallowed.

Skin contact Causes skin irritation.

Eye contact Causes serious eye irritation.

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

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Notes for the doctor If several ounces (60 - 100 ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effects (metabolic acidosis, renal damage). Consider hemodialysis or peritoneal dialysis & thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol: loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Avoid discharge into water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with inert, damp, non-combustible material. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a well-ventilated place.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

ETHANEDIOL

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ particulate
Sk
Long-term exposure limit (8-hour TWA): WEL 20 ppm 52 mg/m³ vapour
Short-term exposure limit (15-minute): WEL 40 ppm 104 mg/m³ vapour
Sk

SODIUM HYDROXIDE

Short-term exposure limit (15-minute): WEL 2 mg/m³

WEL = Workplace Exposure Limit
Sk = Can be absorbed through the skin.

ETHANEDIOL (CAS: 107-21-1)

Ingredient comments WEL = Workplace Exposure Limits

DNEL
Industry - Inhalation; Short term : 35 mg/m³
Industry - Dermal; Long term : 106 mg/kg/day
Consumer - Dermal; Long term : 53 mg/kg/day
Consumer - Inhalation; Long term : 7 mg/m³

PNEC
- Fresh water; 10 mg/l
- marine water; 1 mg/l
- Soil; 1.53 mg/kg
- STP; 199.5 mg/l
- Sediment (Freshwater); 37 mg/kg
- Sediment (Marinewater); 3.7 mg/kg
- Intermittent release; 10 mg/l

SEBACIC ACID (CAS: 111-20-6)

Ingredient comments No exposure limits known for ingredient(s).

SODIUM BENZOATE (CAS: 532-32-1)

Ingredient comments Observe any occupational exposure limits for the product or ingredients.

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DNEL	Workers - Inhalation; Long term local effects: 0.1 mg/m³ Workers - Inhalation; Long term systemic effects: 3 mg/m³ Workers - Dermal; Long term systemic effects: 62.5 mg/kg/day General population - Inhalation; Long term local effects: 0.06 mg/m³ General population - Inhalation; Long term systemic effects: 1.5 mg/m³ General population - Dermal; Long term systemic effects: 31.25 mg/kg/day General population - Oral; Long term systemic effects: 16.6 mg/kg/day
PNEC	- Fresh water; 0.13 mg/l - Sediment (Freshwater); 1.76 mg/kg - marine water; 0.013 mg/l - Sediment (Marinewater); 0.176 mg/kg - Intermittent release; 0.305 mg/l - Soil; 0.276 mg/kg - STP; 10 mg/l

SODIUM HYDROXIDE (CAS: 1310-73-2)

DNEL	Consumer - Inhalation; Long term local effects: 1 mg/m³ Workers - Dermal; Short term local effects: 2 mg/kg/day Workers - Inhalation; Short term local effects: 2 mg/m³ Workers - Inhalation; Long term local effects: 1 mg/m³

8.2. Exposure controls

Protective equipment

Appropriate engineering controls	As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist.
Eye/face protection	The following protection should be worn: Chemical splash goggles or face shield. Personal protective equipment for eye and face protection should comply with European Standard EN166.
Hand protection	The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. The selected gloves should have a breakthrough time of at least 8 hours. Wear protective gloves. Rubber (natural, latex). Neoprene. Polyvinyl chloride (PVC). Nitrile rubber. Laminate of polyethylene and ethylene vinyl alcohol (PE/EVOH). Protective gloves should have a minimum thickness of 0.35 mm. To protect hands from chemicals, gloves should comply with European Standard EN374.
Hygiene measures	Wash after use and before eating, smoking and using the toilet.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Various colours.
Odour	Odourless.

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Odour threshold	No information available.
pH	pH (diluted solution): 7.6 - 8.2 @ 50% solution
Melting point	<11°C
Pour Point	No information available.
Freezing Point	No information available.
Initial boiling point and range	170°C @ 760 mm Hg
Flash point	> 120°C Closed cup.
Evaporation rate	< 0.5 (butyl acetate = 1)
Evaporation factor	No specific test data are available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 3.2 %
Other flammability	No information available.
Vapour pressure	3 mbar @ 20°C
Vapour density	>1.0
Relative density	1.044 - 1.136 @ 20°C
Bulk density	No information available.
Solubility(ies)	Soluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	>435°C
Decomposition Temperature	No specific test data are available.
Viscosity	10 - 30 mm2/s @ 20°C
Explosive properties	Data lacking.
Explosive under the influence of a flame	No information available.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	No information required.
Refractive index	No information available.
Particle size	No information available.
Molecular weight	No information available.
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

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10.1. Reactivity

Reactivity Does not decompose when used and stored as recommended.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Will not polymerise.

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid Strong acids. Strong alkalis. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 2,000.0

Skin corrosion/irritation

Skin corrosion/irritation No information available.

Animal data Irritating.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation

Respiratory sensitisation Data lacking.

Skin sensitisation

Skin sensitisation Data lacking.

Germ cell mutagenicity

Genotoxicity - in vitro Data lacking.

Carcinogenicity

Carcinogenicity Data lacking.

Reproductive toxicity

Reproductive toxicity - fertility Data lacking.

Specific target organ toxicity - single exposure

STOT - single exposure Data lacking.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.

Aspiration hazard

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Aspiration hazard	Data lacking.
Inhalation	Gas or vapour in high concentrations may irritate the respiratory system.
Ingestion	Harmful if swallowed. May cause liver and/or renal damage. NB. Ethylene glycol: lethal dose, adult: 100 ml
Skin contact	Irritating to skin.
Eye contact	Causes serious eye irritation.
Target organs	Kidneys

Toxicological information on ingredients.

ETHANEDIOL

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	1,600.0
Species	Human
Notes (oral LD_{50})	Harmful if swallowed. LD_{50} 1600 mg/kg, Oral, Human
ATE oral (mg/kg)	1,600.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	3,500.0
Species	Mouse
Notes (dermal LD_{50})	LD_{50} 3500 mg/kg, Dermal, Mouse
ATE dermal (mg/kg)	3,500.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	2.5
Notes (inhalation LC_{50})	LD_{50} > 2.5 mg/l, Inhalation, Rat
ATE inhalation (vapours mg/l)	2.5

Skin corrosion/irritation

Animal data	Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation	Not irritating.

Respiratory sensitisation

Respiratory sensitisation	Not sensitising.

Skin sensitisation

Skin sensitisation	Not sensitising.

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Germ cell mutagenicity

Genotoxicity - in vivo This substance has no evidence of mutagenic properties.

Carcinogenicity

Carcinogenicity There is no evidence that the product can cause cancer.

Reproductive toxicity

Reproductive toxicity - development Symptoms following overexposure may include the following: Possible risk of adverse reproductive effects.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.

Target organs Kidneys

Aspiration hazard

Aspiration hazard No information available.

Inhalation Vapour may irritate respiratory system/lungs.

Ingestion Harmful if swallowed. Lethal dose to humans 100ml

Skin contact Prolonged and frequent contact may cause redness and irritation.

Eye contact May cause temporary eye irritation.

Acute and chronic health hazards May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.

Target organs Liver Kidneys

SEBACIC ACID

Acute toxicity - oral

Notes (oral LD_{50}) LD_{50} > 5000 mg/kg, Oral, Rat OECD 401

Acute toxicity - dermal

Notes (dermal LD_{50}) LD_{50} > 2000 mg/kg, Dermal, Rabbit OECD 402

Acute toxicity - inhalation

Notes (inhalation LC_{50}) No information available.

Skin corrosion/irritation

Animal data Not irritating. Rabbit OECD 404

Serious eye damage/irritation

Serious eye damage/irritation Not irritating. Rabbit OECD 405

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

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Skin sensitisation	Not sensitising. Guinea pig

Germ cell mutagenicity

Genotoxicity - in vitro	This substance has no evidence of mutagenic properties.

Carcinogenicity

Carcinogenicity	There is no evidence that the product can cause cancer.

Reproductive toxicity

Reproductive toxicity - fertility	This substance has no evidence of toxicity to reproduction.

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	No information available.

Aspiration hazard

Aspiration hazard	No information available.

Inhalation	Dust in high concentrations may irritate the respiratory system.
Ingestion	May cause discomfort if swallowed.
Skin contact	Dust may cause slight irritation.
Eye contact	May cause temporary eye irritation.

SODIUM BENZOATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	2,000.0
Species	Rat
Notes (oral LD_{50})	LD_{50} > 2000 mg/kg, Oral, Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	2,000.0
Species	Rat
Notes (dermal LD_{50})	LD_{50} > 2000 mg/kg, Dermal, Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} dust/mist mg/l)	12.2
Species	Rat
Notes (inhalation LC_{50})	LC_{50} 12.2 mg/l, Inhalation, Dust/Mist, Rat
ATE inhalation (dusts/mists mg/l)	12.2

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Skin corrosion/irritation

Skin corrosion/irritation No specific test data are available.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation

Respiratory sensitisation No specific test data are available.

Skin sensitisation

Skin sensitisation No specific test data are available.

Germ cell mutagenicity

Genotoxicity - in vitro No specific test data are available.

Carcinogenicity

Carcinogenicity No specific test data are available.

Reproductive toxicity

Reproductive toxicity - fertility No specific test data are available.

Specific target organ toxicity - single exposure

STOT - single exposure No specific test data are available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No specific test data are available.

Aspiration hazard

Aspiration hazard Not available.

Inhalation Dust in high concentrations may irritate the respiratory system.

Ingestion No harmful effects expected from quantities likely to be ingested by accident.

Skin contact Powder may irritate skin.

Eye contact Causes serious eye irritation.

WATER

Skin corrosion/irritation

Animal data No information available.

Serious eye damage/irritation

Serious eye damage/irritation No information available.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

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Genotoxicity - in vitro	No information available.

Carcinogenicity

Carcinogenicity	No information available.

Reproductive toxicity

Reproductive toxicity - fertility	No information available.

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	No information available.

Aspiration hazard

Aspiration hazard	No information available.

Inhalation	No specific health hazards known.
Ingestion	No harmful effects expected from quantities likely to be ingested by accident.
Skin contact	Skin irritation should not occur when used as recommended.
Eye contact	May cause temporary eye irritation.

BORON POTASSIUM OXIDE TETRAHYDRATE

Acute toxicity - oral

Notes (oral LD_{50})	LD_{50} >2500 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD_{50})	LD_{50} >2000 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

Notes (inhalation LC_{50})	LD_{50} >2.04 mg/l, Inhalation, Rat

Skin corrosion/irritation

Skin corrosion/irritation	Not irritating. Rabbit

Serious eye damage/irritation

Serious eye damage/irritation	Not irritating. Rabbit OECD 405

Respiratory sensitisation

Respiratory sensitisation	No information available.

Skin sensitisation

Skin sensitisation	Not sensitising. Buehler test Guinea pig

Germ cell mutagenicity

Genotoxicity - in vitro	Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity	There is no evidence that the product can cause cancer.

DOWCAL 100 & SOLUTIONS

Reproductive toxicity

Reproductive toxicity - fertility	Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	No information available.

Aspiration hazard

Aspiration hazard	No information available.

Inhalation	Dust in high concentrations may irritate the respiratory system.
Ingestion	May cause discomfort if swallowed. Symptoms following overexposure may include the following: Nausea, vomiting. Diarrhoea.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	May cause temporary eye irritation.

SODIUM HYDROXIDE

Acute toxicity - oral

Notes (oral LD_{50})	LD_{50} >500 mg/kg, Oral, Rabbit

Acute toxicity - dermal

Notes (dermal LD_{50})	No specific test data are available.

Acute toxicity - inhalation

Notes (inhalation LC_{50})	No specific test data are available.

Skin corrosion/irritation

Skin corrosion/irritation	Causes severe burns.

Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation	No information available.

Skin sensitisation

Skin sensitisation	No information available.

Germ cell mutagenicity

Genotoxicity - in vitro	No information available.

Carcinogenicity

Carcinogenicity	No information available.

Reproductive toxicity

Reproductive toxicity - fertility	No information available.

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Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

Inhalation Dust is severely irritating to the upper respiratory system. Symptoms following overexposure may include the following: Coughing. Wheezing/breathing difficulties. May cause an asthma-like shortness of breath. Sore throat. Burning sensation in mouth. Upper respiratory irritation. Tracheobronchitis, pulmonary oedema.

Ingestion Causes severe burns. May cause burns in mucous membranes, throat, oesophagus and stomach. Symptoms following overexposure may include the following: Chemical burns. Burning sensation in mouth. Nausea, vomiting. Vomiting of blood. Swallowing concentrated chemical may cause severe internal injury.

Skin contact Causes severe burns. Blistering may occur. May cause serious chemical burns to the skin. Prolonged contact causes serious tissue damage.

Eye contact Causes serious eye damage. May cause chemical eye burns. Symptoms following overexposure may include the following: Severe irritation, burning and tearing. Corneal damage. May cause permanent damage if eye is not immediately irrigated.

SECTION 12: Ecological information

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

Ecological information on ingredients.

ETHANEDIOL

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

SEBACIC ACID

Ecotoxicity The product is not expected to be hazardous to the environment. However, large or frequent spills may have hazardous effects on the environment.

SODIUM BENZOATE

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

WATER

Ecotoxicity There are no data on the ecotoxicity of this product.

BORON POTASSIUM OXIDE TETRAHYDRATE

DOWCAL 100 & SOLUTIONS

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

SODIUM HYDROXIDE

Ecotoxicity The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

12.1. Toxicity

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish No information available.

Ecological information on ingredients.

ETHANEDIOL

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish LC50, 96 hours: 72860 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EC_{50}, 48 hours: > 100 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC_{50}, 96 hours: 6500 - 13000 mg/l,

Acute toxicity - microorganisms EC_{50}, 30 minutes: 225 mg/l, Activated sludge

SEBACIC ACID

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish LC_{50}, 96 hours: >100 mg/l, Brachydanio rerio (Zebra Fish)
OECD 203

Acute toxicity - aquatic invertebrates EC_{50}, 48 hours: > 100 mg/l, Daphnia magna
OECD 202

SODIUM BENZOATE

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish LC50, 96 hours: > 100 mg/l,
OECD 203
LC_{50}, 96 hour: 484 mg/l, Pimephales promelas (Fat-head Minnow)
NOEC, 144 hour: 10 mg/l, Brachydanio rerio (Zebra Fish)

Acute toxicity - aquatic invertebrates EC_{50}, 96 hours: > 100 mg/l, Daphnia magna
OECD 202

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Acute toxicity - aquatic plants	EC_{50}, 72 hours: > 100 mg/l, Algae OECD 201 EC_{50}, 72 hour: > 30.5 mg/l, Pseudokirchneriella subcapitata NOEC, 72 hour: 0.09 mg/l, Pseudokirchneriella subcapitata
Acute toxicity - microorganisms	NOEC, 168 hour: > 100 mg/l, Achromobacter sp.

WATER

Toxicity	Not considered toxic to fish.

BORON POTASSIUM OXIDE TETRAHYDRATE

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: 280 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 133 mg/l, Daphnia magna

SODIUM HYDROXIDE

Toxicity	The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: 33-189 mg/l mg/l, Fish LC_{50}, 96 hour: 45.5 mg/l, Oncorhynchus mykiss (Rainbow trout) LC_{50}, 96 hour: 125 mg/l, Freshwater fish Gambusia affinis (Mosquito fish)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 40-240 mg/l mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability The product is readily biodegradable.

Ecological information on ingredients.

ETHANEDIOL

Persistence and degradability	The substance is readily biodegradable.
Biodegradation	- Degradation (%) 90%: > 10 days OECD 301A

SEBACIC ACID

Persistence and degradability	The product is readily biodegradable.
Biodegradation	- Degradation 98%: 7 days

SODIUM BENZOATE

DOWCAL 100 & SOLUTIONS

Persistence and degradability	The product is readily biodegradable.
Biodegradation	- Degradation 94%: 28 day

WATER

Persistence and degradability	There are no data on the degradability of this product.

BORON POTASSIUM OXIDE TETRAHYDRATE

Persistence and degradability	Not applicable. The product contains only inorganic substances which are not biodegradable.

SODIUM HYDROXIDE

Persistence and degradability	The product contains only inorganic substances which are not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	No information available.

Ecological information on ingredients.

ETHANEDIOL

Bioaccumulative potential	The product is not bioaccumulating.
Partition coefficient	log Kow: -1.36

SEBACIC ACID

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	No information available.

SODIUM BENZOATE

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	log Kow: -2.27

WATER

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	No information available.

BORON POTASSIUM OXIDE TETRAHYDRATE

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	Not applicable.

SODIUM HYDROXIDE

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Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient No information available.

12.4. Mobility in soil

Mobility The product is soluble in water.

Ecological information on ingredients.

ETHANEDIOL

Mobility The product is soluble in water.

Adsorption/desorption coefficient Water - Koc: 1 @ °C

SEBACIC ACID

Mobility Slightly soluble in water.

SODIUM BENZOATE

Surface tension 72.9 mN/m @ 20°C OECD 115

WATER

Mobility The product is soluble in water.

BORON POTASSIUM OXIDE TETRAHYDRATE

Mobility No information available.

SODIUM HYDROXIDE

Mobility The product is water-soluble and may spread in water systems.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

ETHANEDIOL

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

SEBACIC ACID

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

SODIUM BENZOATE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

WATER

DOWCAL 100 & SOLUTIONS

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

BORON POTASSIUM OXIDE TETRAHYDRATE

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

SODIUM HYDROXIDE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects No information available.

Ecological information on ingredients.

ETHANEDIOL

Cod 1.22

Other adverse effects None known.

SEBACIC ACID

Other adverse effects Not determined.

SODIUM BENZOATE

Other adverse effects Not available.

WATER

Other adverse effects Not determined.

BORON POTASSIUM OXIDE TETRAHYDRATE

Other adverse effects None known.

SODIUM HYDROXIDE

Other adverse effects Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

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Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

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

EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

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Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
Kow: Octanol-water partition coefficient.
LC_{50}: Lethal Concentration to 50 % of a test population.
LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose).
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
vPvB: Very Persistent and Very Bioaccumulative.
IARC: International Agency for Research on Cancer.
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
cATpE: Converted Acute Toxicity Point Estimate.
BCF: Bioconcentration Factor.
BOD: Biochemical Oxygen Demand.
EC_{50}: 50% of maximal Effective Concentration.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
LOEC: Lowest Observed Effect Concentration.
DMEL: Derived Minimal Effect Level.
EL50: Exposure Limit 50
hPa: Hectopascal
LL50: Lethal Loading fifty
OECD: Organisation for Economic Co-operation and Development
POW: Octanol-water partition coefficient
SCBA: self-contained breathing apparatus
STP: Sewage Treatment Plant
VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
Aquatic Acute = Hazardous to the aquatic environment (acute)
Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

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1.002

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Hazard statements in full	H290 May be corrosive to metals. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H318 Causes serious eye damage. H319 Causes serious eye irritation. H361d Suspected of damaging the unborn child. H373 May cause damage to organs through prolonged or repeated exposure. H373 May cause damage to organs (Kidneys) through prolonged or repeated exposure.
Signature	Jitendra Panchal