

Fleetguard DCA-40L Corrosion Inhibitor

Fleetguard

Chemwatch: 16506

Version No: 3.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 3

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

Product Identifier

Product name	Fleetguard DCA-40L Corrosion Inhibitor
Synonyms	DCA 2 Liquid DCA II Liquid, Engine Cooling System Corrosion Inhibitor, DCA-30L DCA-35L DCA-40L DCA-45L DCA-50L
Other means of identification	Not Available

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

Relevant identified uses	Corrosion inhibiting additive for engine cooling water system, particularly diesel engines, added at the rate of 3% ie 33:1. May be premixed or added directly to water. Available also as a paste.
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Details of the supplier of the safety data sheet

Registered company name	Fleetguard
Address	31 Garden Street Kilsyth VIC 3137 Australia
Telephone	+61 3 9721 9100
Fax	+61 3 9721 9148
Website	Not Available
Email	Not Available

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	+61 3 9573 3112
Other emergency telephone numbers	Not Available

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
1800 039 008	1800 039 008	+612 9186 1132

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Poisons Schedule	S5
Classification ^[1]	Acute Toxicity (Oral) Category 3, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1, Skin Sensitizer Category 1, Germ cell mutagenicity Category 2, Carcinogenicity Category 1B, Reproductive Toxicity Category 1B, Acute Aquatic Hazard Category 2, Chronic Aquatic Hazard Category 2
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Label elements

Continued...

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Hazard pictogram(s)	
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SIGNAL WORD	DANGER
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Hazard statement(s)

H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
1330-43-4	5-12	<u>sodium borate anhydrous (Na2B4O7)</u>
7631-99-4	2-5	<u>sodium nitrate</u>
7632-00-0	2-5	<u>sodium nitrite</u>

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10213-79-3	2-5	<u>sodium metasilicate, pentahydrate</u>
149-30-4	0.5-3	<u>2-mercaptobenzothiazole</u>
Not Available	0.3-1	scale inhibitor defoamer and dye unregulated
7732-18-5	75-85	<u>water</u>
		NOTE: Manufacturer has supplied full ingredient information to allow CHEMWATCH assessment.

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor.
Ingestion	<ul style="list-style-type: none"> ▶ IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. ▶ For advice, contact a Poisons Information Centre or a doctor. ▶ Urgent hospital treatment is likely to be needed. ▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. ▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. ▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. <p>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</p> <ul style="list-style-type: none"> ▶ INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. <p>NOTE: Wear a protective glove when inducing vomiting by mechanical means.</p>

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- ▶ There is no restriction on the type of extinguisher which may be used.

Special hazards arising from the substrate or mixture

Fire Incompatibility	Avoid reaction with strong acids.
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves in the event of a fire. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Use fire fighting procedures suitable for surrounding area. ▶ DO NOT approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire.
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	<ul style="list-style-type: none"> ▶ Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered to be a significant fire risk. ▶ Expansion or decomposition on heating may lead to violent rupture of containers. ▶ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). ▶ May emit acrid smoke.
HAZCHEM	Not Applicable

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. ▶ Wipe up. ▶ Place in a suitable, labelled container for waste disposal.
Major Spills	<ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Stop leak if safe to do so. ▶ Contain spill with sand, earth or vermiculite. ▶ Collect recoverable product into labelled containers for recycling. ▶ Neutralise/decontaminate residue (see Section 13 for specific agent). ▶ Collect solid residue and seal in labelled drums for disposal. ▶ Wash area and prevent runoff into drains. ▶ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▶ If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Limit all unnecessary personal contact. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	<ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers. ▶ Protect containers against physical damage and check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum.
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	<ul style="list-style-type: none"> ▶ Packing as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Avoid storage with acids, and contact with aluminium, copper, brass, bronze, zinc and tin.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	sodium borate anhydrous (Na2B4O7)	Borates, tetra, sodium salts (decahydrate)	5 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	sodium borate anhydrous (Na2B4O7)	Borates, tetra, sodium salts (pentahydrate)	1 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	sodium borate anhydrous (Na2B4O7)	Borates, tetra, sodium salts (anhydrous)	1 mg/m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
sodium borate anhydrous (Na2B4O7)	Sodium borate decahydrate (Borax)	6 mg/m3	190 mg/m3	1,100 mg/m3
sodium borate anhydrous (Na2B4O7)	Sodium borate; (Disodium tetraborate)	6 mg/m3	88 mg/m3	530 mg/m3
sodium nitrate	Sodium nitrate	4.1 mg/m3	45 mg/m3	270 mg/m3
sodium nitrite	Sodium nitrite	6.4 mg/m3	71 mg/m3	240 mg/m3
sodium metasilicate, pentahydrate	Sodium metasilicate pentahydrate	6.6 mg/m3	73 mg/m3	440 mg/m3
sodium metasilicate, pentahydrate	Sodium silicate; (Sodium metasilicate)	3.8 mg/m3	42 mg/m3	250 mg/m3
2-mercaptobenzothiazole	Mercaptobenzothiazole, 2-; (2-Benzothiazolethiol)	15 mg/m3	27 mg/m3	56 mg/m3

Ingredient	Original IDLH	Revised IDLH
sodium borate anhydrous (Na2B4O7)	Not Available	Not Available
sodium nitrate	Not Available	Not Available
sodium nitrite	Not Available	Not Available
sodium metasilicate, pentahydrate	Not Available	Not Available
2-mercaptobenzothiazole	Not Available	Not Available
scale inhibitor defoamer and dye unregulated	Not Available	Not Available
water	Not Available	Not Available

MATERIAL DATA

None assigned. Refer to individual constituents.

Exposure controls

Appropriate engineering controls	<ul style="list-style-type: none"> ▶ If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection.
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ Safety glasses with side shields ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury

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	<ul style="list-style-type: none"> ▶ experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ No special equipment needed when handling small quantities. ▶ OTHERWISE: Wear general protective gloves, e.g. light weight rubber gloves. Or as required: Wear chemical protective gloves, e.g. PVC. Wear safety footwear.
Body protection	See Other protection below
Other protection	<p>No special equipment needed when handling small quantities.</p> <p>OTHERWISE:</p> <ul style="list-style-type: none"> ▶ Overalls. ▶ Barrier cream. ▶ Eyewash unit.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the: **"Forsberg Clothing Performance Index"**.
The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:
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Material	CPI
BUTYL	C
NATURAL RUBBER	C
NEOPRENE	C
PVA	C
VITON	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	-AUS P2	-	-PAPR-AUS / Class 1 P2
up to 50 x ES	-	-AUS / Class 1 P2	-
up to 100 x ES	-	-2 P2	-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Blue non combustible alkaline liquid; mixes with water.		
Physical state	Liquid	Relative density (Water = 1)	1.16-1.19
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not available.
pH (as supplied)	11.6	Decomposition temperature	Not available.
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not available.
Flash point (°C)	Non Combustible	Taste	Not Available
Evaporation rate	Slow	Explosive properties	Not Available

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Flammability	Non Combustible	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	80 approx
Vapour pressure (kPa)	As water	Gas group	Not Available
Solubility in water (g/L)	Soluble	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	> 1	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Not normally a hazard due to non-volatile nature of product The mist is amp;5040 amp;5400
Ingestion	The material is amp;5040 amp;11a amp;5044 amp;5110 Considered an unlikely route of entry in commercial/industrial environments
Skin Contact	The liquid is irritating to the skin.
Eye	The liquid is irritating to the eyes and may be corrosive.
Chronic	The principal routes of exposure are skin and eye contact. Eye contact with the liquid or mist will cause redness, severe irritation and even burns or ulceration. Liquid on the skin may cause redness, rash, swelling if contact with the concentrate is prolonged. Ingestion may cause corrosion of the mucous membranes/alimentary tract with nausea and vomiting. The nitrate/nitrite components may cause abnormalities to the blood transport mechanism (methaemoglobinemia) with blue tinge of skin (cyanosis) as a symptom.

	TOXICITY	IRRITATION
Fleetguard DCA-40L Corrosion Inhibitor	Not Available	Not Available
sodium borate anhydrous (Na₂B₄O₇)	Dermal (rabbit) LD50: >2000 mg/kg ^[1] Oral (rat) LD50: >250 mg/kg ^[1]	Not Available
sodium nitrate	dermal (rat) LD50: >5000 mg/kg ^[1] Oral (rat) LD50: 1267 mg/kg ^[2]	Not Available
sodium nitrite	Inhalation (rat) LC50: 0.0055 mg/l/4H ^[2] Oral (rat) LD50: 157.9 mg/kg ^[2]	Eye (rabbit): 500 mg/24hr - mild
sodium metasilicate, pentahydrate	Oral (rat) LD50: 847 mg/kg ^[2]	Skin (human): 250 mg/24h SEVERE Skin (rabbit): 250 mg/24h SEVERE

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2-mercaptobenzothiazole	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >7940 mg/kg ^[2]	Eye (rabbit): (FHSA) 3.2/110.0 *
	Oral (rat) LD50: 100 mg/kg ^[2]	non-irritant
		Skin (rabbit): (FHSA) 0.0/8.0 * slight irritant
water	TOXICITY	IRRITATION
	Not Available	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

SODIUM BORATE ANHYDROUS (NA2B4O7)	Reproductive effector in rats Mutagenic towards bacteria
SODIUM NITRITE	Tumorigenic - Carcinogenic by RTECS criteria.
SODIUM METASILICATE, PENTAHYDRATE	<p>The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation. Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).</p> <p>The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals. Often, this results in an impairment of gas exchange, the primary function of the lungs. Therefore prolonged exposure to respiratory irritants may cause sustained breathing difficulties.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.</p> <p>sodium metasilicate anhydrous:</p>
2-MERCAPTOBENZOTHAZOLE	<p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p> <p>for 2-mercaptobenzothiazole (MBT)</p> <p>The sulfenamide group (-NH-C(=S)-S-) is the prime determinant of toxicity for all members of the Benzothiazole-based Thiazoles category. The acute and subchronic toxicity of MBT is relatively low. Skin and eye irritation effects are not present or are mild, but allergic skin reaction is possible in susceptible persons.</p> <p>Data from <i>in vitro</i> and <i>in vivo</i> studies indicate a low concern for mutagenicity caused by MBT.</p> <p>Mercaptobenzothiazole (MBT) is a potent skin sensitizer in man and cross reactions with other rubber chemicals can occur. It is also a skin irritant in man. A solution of the sodium salt caused irreversible damage to the rabbit eye. MBT and its sodium salt were of low acute general toxicity in laboratory animals treated by the oral and dermal routes. The target sites following oral administration included the central nervous system (CNS), lung, liver, kidney and gastro-intestinal tract, and rabbits treated dermally also suffered CNS effects. According to brief summaries, feeding MBT to rats produced no conclusive evidence of reproductive effects. Comprehensive oral studies generated some evidence of carcinogenicity in rats; results in mice were inconclusive. MBT and its sodium salt gave no evidence of mutagenicity in Ames bacterial assays, but MBT was mutagenic and induced chromosomal damage in mammalian cells in culture.</p> <p>WARNING: This substance has been classified by the IARC as Group 2A: Probably Carcinogenic to Humans. Tumorigenic</p>
WATER	No significant acute toxicological data identified in literature search.
SODIUM BORATE ANHYDROUS (NA2B4O7) & SODIUM NITRATE & SODIUM METASILICATE, PENTAHYDRATE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and

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	duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.
SODIUM NITRITE & SODIUM METASILICATE, PENTAHYDRATE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Acute Toxicity	✓	Carcinogenicity	✓
Skin Irritation/Corrosion	✓	Reproductivity	✓
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	⊗
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	⊗
Mutagenicity	✓	Aspiration Hazard	⊗

Legend: ✗ – Data available but does not fill the criteria for classification
✓ – Data available to make classification
⊗ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Fleetguard DCA-40L Corrosion Inhibitor	Not Available	Not Available	Not Available	Not Available	Not Available
sodium borate anhydrous (Na2B4O7)	LC50	96	Fish	74mg/L	2
	EC50	96	Algae or other aquatic plants	15.4mg/L	4
	NOEC	768	Fish	0.009mg/L	2
sodium nitrate	LC50	96	Fish	573mg/L	4
	NOEC	2880	Fish	1.6mg/L	4
sodium nitrite	LC50	96	Fish	0.048mg/L	4
	EC50	48	Crustacea	ca.12.5100mg/L	1
	EC50	72	Algae or other aquatic plants	>100mg/L	2
	NOEC	2	Fish	0.02mg/L	4
sodium metasilicate, pentahydrate	LC50	96	Fish	180mg/L	1
2-mercaptobenzothiazole	LC50	96	Fish	0.42mg/L	4
	EC50	48	Crustacea	2.9mg/L	4
	EC50	96	Algae or other aquatic plants	0.23mg/L	4
	NOEC	2136	Fish	0.041mg/L	2
water	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Persistence and degradability

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Ingredient	Persistence: Water/Soil	Persistence: Air
sodium nitrate	LOW	LOW
sodium nitrite	LOW	LOW
2-mercaptobenzothiazole	HIGH	HIGH
water	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
sodium nitrate	LOW (LogKOW = 0.209)
sodium nitrite	LOW (LogKOW = 0.0564)
2-mercaptobenzothiazole	LOW (BCF = 0.8)
water	LOW (LogKOW = -1.38)

Mobility in soil

Ingredient	Mobility
sodium nitrate	LOW (KOC = 14.3)
sodium nitrite	LOW (KOC = 23.74)
2-mercaptobenzothiazole	LOW (KOC = 21.41)
water	LOW (KOC = 14.3)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Recycle wherever possible or consult manufacturer for recycling options. ▶ Consult State Land Waste Management Authority for disposal. ▶ Treat and neutralise with dilute acid at an effluent treatment plant. ▶ Recycle containers, otherwise dispose of in an authorised landfill.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

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

SODIUM BORATE ANHYDROUS (NA2B4O7)(1330-43-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

SODIUM NITRATE(7631-99-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

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SODIUM NITRITE(7632-00-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists Australia Inventory of Chemical Substances (AICS)

SODIUM METASILICATE, PENTAHYDRATE(10213-79-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists Australia Inventory of Chemical Substances (AICS)

2-MERCAPTOBENZOTHAZOLE(149-30-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
Australia Inventory of Chemical Substances (AICS)

WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (sodium metasilicate, pentahydrate; water; sodium borate anhydrous (Na ₂ B ₄ O ₇); 2-mercaptobenzothiazole; sodium nitrite; sodium nitrate)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

Name	CAS No
sodium borate anhydrous (Na ₂ B ₄ O ₇)	1330-43-4, 1303-96-4, 12179-04-3

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit.
- IDLH: Immediately Dangerous to Life or Health Concentrations
- OSF: Odour Safety Factor
- NOAEL :No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index

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