

1. Chemical Product and Company Identification

Material name	OAK PROTECT® 401 CORROSION INHIBITOR
Version #	01
Issue date	07-08-2015
CAS #	Mixture
MSDS Number	Not applicable
Recommended use	CORROSION INHIBITOR
Manufacturer	
Company name	CIMCOOL® Industrial Products LLC 3000 Disney Street Cincinnati, Ohio 45209 513-458-8100
Telephone (General Information)	
Emergency telephone number	1-800-424-9300 (CHEMTREC)
Emergency telephone number (outside USA)	1-703-527-3887 (CHEMTREC)
Supplier	
Company name	Milacron Canada Corp.
Address	1175 Appleby Line Road, Unit B-1 Burlington Ontario L7L5H9 Canada 905-319-1919
Telephone (General Information)	
Emergency telephone number (outside USA)	1-703-527-3887 (CHEMTREC)

2. Hazards Identification

Emergency overview	Causes eye irritation. Causes skin irritation. May cause an allergic skin reaction. May cause irritation to the respiratory system. Avoid prolonged contact with eyes, skin and clothing.
Potential health effects	
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Eyes	Causes eye irritation. Do not get this material in contact with eyes.
Skin	Causes skin irritation. May cause sensitization by skin contact. Avoid contact with the skin.
Inhalation	May cause irritation of respiratory tract. Prolonged inhalation may be harmful.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Do not ingest.

3. Composition/Information on Ingredients

Components	CAS #	Percent
TRIETHANOLAMINE	102-71-6	10 - 30
MONOETHANOLAMINE	141-43-5	5 - 10
ISOPROPANOLAMINE	78-96-6	1 - 5
HEXAHYDRO-1,3,5-TRIS (2-HYDROXYETHYL)-S- TRIAZINE	4719-04-4	0.1 - 1
Other components below reportable levels		40 - 70

4. FIRST AID MEASURES

First aid procedures	
Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if symptoms occur.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting. Drink 1 or 2 glasses of water. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Notes to physician	Provide general supportive measures and treat symptomatically. Symptoms may be delayed.
General advice	If exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.

5. FIRE FIGHTING MEASURES

Flammable properties	Not flammable by WHMIS criteria.
Extinguishing media	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	Not applicable, non-combustible.
Protection of firefighters	
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Protective equipment for firefighters	Wear suitable protective equipment.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk.
Specific methods	In the event of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Explosion data	
Sensitivity to static discharge	Not applicable.
Sensitivity to mechanical impact	Not applicable.
Hazardous combustion products	Smoke, fumes, oxides of nitrogen, and oxides of carbon

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Keep unnecessary personnel away. Wear appropriate personal protective equipment. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination. Contact local authorities in case of spillage to drain/aquatic environment.
Methods for containment	Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Local authorities should be advised if significant spillages cannot be contained. This product is miscible in water. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Do not flush spill to drain. For waste disposal, see section 13 of the MSDS.
Other information	Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling

Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not ingest. Do not get this material on clothing. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes. Avoid prolonged and repeated contact. Use only in well-ventilated areas. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash thoroughly after handling. Wash contaminated clothing before reuse. Practice good housekeeping. Handle and open container with care. Do not empty into drains.

Storage

To maintain product quality, do not store in heat or direct sunlight. Use care in handling/storage. Keep containers closed when not in use. Keep away from food, drink and animal feedingstuffs. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the MSDS). Store in a well-ventilated place. Room temperature - normal conditions. Do not allow material to freeze. If frozen, product may separate. Thaw completely at room temperature and stir thoroughly prior to use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits

US. ACGIH Threshold Limit Values

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	STEL	6 ppm
TRIETHANOLAMINE (CAS 102-71-6)	TWA	5 mg/m ³
MONOETHANOLAMINE (CAS 141-43-5)	TWA	3 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	STEL	15 mg/m ³
		6 ppm
	TWA	7.5 mg/m ³
TRIETHANOLAMINE (CAS 102-71-6)	TWA	5 mg/m ³
MONOETHANOLAMINE (CAS 141-43-5)	TWA	3 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	STEL	6 ppm
TRIETHANOLAMINE (CAS 102-71-6)	TWA	5 mg/m ³
MONOETHANOLAMINE (CAS 141-43-5)	TWA	3 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	STEL	6 ppm
TRIETHANOLAMINE (CAS 102-71-6)	TWA	5 mg/m ³
MONOETHANOLAMINE (CAS 141-43-5)	TWA	3 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	STEL	6 ppm
TRIETHANOLAMINE (CAS 102-71-6)	TWA	3.1 mg/m ³
MONOETHANOLAMINE (CAS 141-43-5)	TWA	3 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

	Type	Value
TRIETHANOLAMINE (CAS 102-71-6)	TWA	0.5 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	STEL	15 mg/m3
		6 ppm
TRIETHANOLAMINE (CAS 102-71-6)	TWA	7.5 mg/m3
MONOETHANOLAMINE (CAS 141-43-5)	TWA	5 mg/m3
		3 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

	Type	Value
MONOETHANOLAMINE (CAS 141-43-5)	PEL	6 mg/m3
		3 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Engineering controls

Ensure compliance with applicable exposure limits. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash fountain and emergency showers are recommended.

Personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles). Do not get in eyes. Eye wash fountain is recommended.

Skin protection

Wear suitable protective clothing and gloves.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection

Use protective gloves made of: Nitrile.

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	CLEAR
Physical state	Liquid.
Form	Liquid.
Color	Not available.
Odor	CHEMICAL
Odor threshold	Not available.
pH	10.2
Vapor pressure	Not available.
Vapor density	Not available.
Boiling point	212 °F (100 °C)
Melting point/Freezing point	< 32 °F (< 0 °C)
Solubility (water)	100 % Water Miscible
Specific gravity	1.05
Relative density	Not available.
Flash point	Not Applicable
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	Not available.

Evaporation rate Like water when diluted

Other data

pH in aqueous solution 10.0 @ 10%

VOC ASTM D2369 9 %

10. Stability and Reactivity

Chemical stability Material is stable under normal conditions.

Conditions to avoid Heat, flames and sparks. Contact with incompatible materials.

Incompatible materials Acids. Avoid contact with oxidizers or reducing agents. Do not add sodium nitrite or other nitrosating agents which may form cancer causing nitrosamines.

Hazardous decomposition products Smoke, fumes, oxides of nitrogen, and oxides of carbon

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological data

Components	Species	Test Results
ISOPROPANOLAMINE (CAS 78-96-6)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1576 mg/kg
<i>Inhalation</i>		
LC0	Rat	1005 mg/m ³ , 3 hours
<i>Oral</i>		
LD50	Rat	1715 mg/kg
MONOETHANOLAMINE (CAS 141-43-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1025 mg/kg
<i>Oral</i>		
LD50	Guinea pig	620 mg/kg
	Mouse	700 mg/kg
	Rat	10.2 g/kg
TRIETHANOLAMINE (CAS 102-71-6)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Guinea pig	5300 mg/kg
	Rat	8 g/kg
Acute effects	May cause an allergic skin reaction. Expected to be a low hazard for usual industrial or commercial handling by trained personnel.	
Sensitization	May cause sensitization by skin contact.	
Chronic effects	Prolonged exposure may cause chronic effects.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
TRIETHANOLAMINE (CAS 102-71-6)		3 Not classifiable as to carcinogenicity to humans.
Skin corrosion/irritation	Causes skin irritation. Prolonged skin contact may cause temporary irritation. Defatting, drying and cracking of skin.	
Serious eye damage/irritation	Causes serious eye irritation. Direct contact with eyes may cause temporary irritation.	
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	

Reproductive effects	This product is not expected to cause reproductive or developmental effects.
Teratogenicity	Not classified.
Symptoms and target organs	Direct contact with eyes may cause temporary irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. Defatting of the skin. May cause an allergic skin reaction. May cause respiratory irritation.
Synergistic materials	Not applicable.
Further information	Symptoms may be delayed.

12. ECOLOGICAL INFORMATION

Ecotoxicological data

Components		Species	Test Results
ISOPROPANOLAMINE (CAS 78-96-6)			
Aquatic			
Fish	LC50	Goldfish (<i>Carassius auratus</i>)	210 mg/l, 96 hours
MONOETHANOLAMINE (CAS 141-43-5)			
Aquatic			
Fish	LC50	Rainbow trout, donaldson trout (<i>Oncorhynchus mykiss</i>)	114 - 196 mg/l, 96 hours
TRIETHANOLAMINE (CAS 102-71-6)			
Aquatic			
Crustacea	EC50	Water flea (<i>Ceriodaphnia dubia</i>)	565.2 - 658.3 mg/l, 48 hours
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>)	10610 - 13010 mg/l, 96 hours

Ecotoxicity	Contains a substance which causes risk of hazardous effects to the environment.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Aquatic toxicity	Not available.
Persistence and degradability	Not available.
Partition coefficient	
ISOPROPANOLAMINE	-0.93
MONOETHANOLAMINE	-1.31
TRIETHANOLAMINE	-1
Mobility in environmental media	This product is miscible in water.

13. DISPOSAL CONSIDERATIONS

Disposal instructions	Consult authorities before disposal. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

14. Transport Information

TDG	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. REGULATORY INFORMATION

Canadian regulations	This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
WHMIS status	Controlled

WHMIS classification

D2B - Other Toxic Effects-TOXIC

WHMIS labeling



International Inventories

Country(s) or region	Inventory name	On inventory or exempt (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. OTHER INFORMATION

HMIS® ratings

Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 1
Flammability: 0
Instability: 0

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.

Prepared by

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This data sheet contains changes from the previous version in section(s):

This document has undergone significant changes and should be reviewed in its entirety.