

SAFETY DATA SHEET

1. Identification

Product identifier OAK PROTECT® 402
CORROSION INHIBITOR

Other means of identification

SDS number Not applicable

Recommended use CORROSION INHIBITOR

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name CIMCOOL® Industrial Products LLC
3000 Disney Street
Cincinnati, Ohio 45209

Telephone (General Information) 513-458-8100

Emergency telephone number 1-800-424-9300 (CHEMTREC)

Emergency telephone number (outside USA) 1-703-527-3887 (CHEMTREC)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Skin irritation Category 2
Serious eye irritation Category 2

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Causes skin irritation. Causes serious eye irritation.

Precautionary statement

Prevention Wash thoroughly after handling. Wear eye protection/face protection. Wear protective gloves.

Response If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Storage Store away from incompatible materials.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information The classified hazards shown on this SDS are associated with the product concentrate. These hazards are not expected under recommended use conditions and dilution.

3. Composition/information on ingredients

Mixtures

| Chemical name | Common name and synonyms | CAS number | % |
|--|--------------------------|------------|---------|
| MONOETHANOLAMINE | | 141-43-5 | 10 - 30 |
| NEODECANOIC ACID | | 26896-20-8 | 10 - 30 |
| TRIETHANOLAMINE | | 102-71-6 | 5 - 10 |
| MONOISOPROPANOLAMINE | | 78-96-6 | 3 - 7 |
| Other components below reportable levels | | | 30 - 60 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

| | |
|---|--|
| Inhalation | Move to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell. Under normal conditions of intended use, this material is not expected to be an inhalation hazard. |
| Skin contact | Rinse with water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. |
| Eye contact | Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. Drink 1 or 2 glasses of water. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell. |
| Most important symptoms/effects, acute and delayed | Direct contact with eyes may cause temporary irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Symptoms may be delayed. |
| General information | If exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance. |

5. Fire-fighting measures

| | |
|--|--|
| Suitable extinguishing media | Foam. Water fog. Powder. Carbon dioxide (CO2). Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | Not applicable, non-combustible. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions 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 | Use standard firefighting procedures and consider the hazards of other involved materials. In the event of fire and/or explosion do not breathe fumes. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

| | |
|--|--|
| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. 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 SDS. |
| Methods and materials for containment and cleaning up | Local authorities should be advised if significant spillages cannot be contained. Use water spray to reduce vapors or divert vapor cloud drift. This product is miscible in water. Clean up in accordance with all applicable regulations. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. 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. For waste disposal, see section 13 of the SDS. |

Environmental precautions Contact local authorities in case of spillage to drain/aquatic environment. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Do not allow material to freeze. Store away from incompatible materials (see Section 10 of the SDS). 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. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

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

US. NIOSH: Pocket Guide to Chemical Hazards

| | Type | Value |
|------------------------------------|------|------------------------------|
| MONOETHANOLAMINE (CAS 141-43-5) | STEL | 15 mg/m ³ |
| | | 6 ppm |
| | TWA | 8 mg/m ³ 3 ppm |

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 |

Appropriate engineering controls 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 facilities and emergency shower must be available when handling this product.

Individual protection measures, such as 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

Hand protection

Use protective gloves made of: Nitrile.

Other

Wear suitable protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Do not get in eyes, on skin, on clothing. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance CLEAR

Physical state Liquid.

Form Liquid.

Color Not available.

Odor CHEMICAL

| | |
|---|-------------------------|
| Odor threshold | Not available. |
| pH | 10.4 |
| Melting point/freezing point | < 32 °F (< 0 °C) |
| Initial boiling point and boiling range | > 212 °F (> 100 °C) |
| Flash point | Not Applicable |
| Evaporation rate | Like water when diluted |
| Flammability (solid, gas) | Not applicable. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | 100 % Water Miscible |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |
| pH in aqueous solution | 9.7 @ 10% |
| Specific gravity | 1.036 |
| VOC ASTM D2369 | 17 % |

10. Stability and reactivity

| | |
|---|--|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Heat, flames and sparks. Contact with incompatible materials. |
| Incompatible materials | Acids. Oxidizing 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 |

11. Toxicological information

Information on likely routes of exposure

| | |
|---------------------|-------------------------|
| Inhalation | Not classified. |
| Skin contact | Causes skin irritation. |
| Eye contact | Causes eye irritation. |
| Ingestion | Not classified. |

| | |
|---|--|
| Symptoms related to the physical, chemical and toxicological characteristics | Direct contact with eyes may cause temporary irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. |
|---|--|

Information on toxicological effects

Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

| Acute toxicity | | |
|------------------------------------|----------------|----------------------------------|
| Components | Species | Test Results |
| MONOETHANOLAMINE (CAS 141-43-5) | | |
| Acute | | |
| Dermal | | |
| LD50 | Rabbit | 1025 mg/kg |
| Oral | | |
| LD50 | Guinea pig | 620 mg/kg |
| | Mouse | 700 mg/kg |
| | Rat | 10.2 g/kg |
| MONOISOPROPANOLAMINE (CAS 78-96-6) | | |
| Acute | | |
| Dermal | | |
| <i>Liquid</i> | | |
| LD50 | Rabbit | 1576 mg/kg |
| Inhalation | | |
| <i>Mist</i> | | |
| LC0 | Rat | 1005 mg/m ³ , 3 hours |
| Oral | | |
| <i>Liquid</i> | | |
| LD50 | Rat | 2813 mg/kg |
| NEODECANOIC ACID (CAS 26896-20-8) | | |
| Acute | | |
| Dermal | | |
| <i>Liquid</i> | | |
| LD50 | Rabbit | > 3640 mg/kg |
| Inhalation | | |
| <i>Vapor</i> | | |
| LC50 | Rat | > 3 mg/l |
| <i>Mist</i> | | |
| LD50 | Rat | > 511 mg/m ³ |
| Oral | | |
| <i>Liquid</i> | | |
| LD50 | Rat | 2066 mg/kg |
| TRIETHANOLAMINE (CAS 102-71-6) | | |
| Acute | | |
| Dermal | | |
| <i>Liquid</i> | | |
| LD50 | Rabbit | > 2000 mg/kg |
| Oral | | |
| LD50 | Guinea pig | 5300 mg/kg |
| <i>Liquid</i> | | |
| LD50 | Rat | 4190 mg/kg |

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization Not classified.

| | |
|---|---|
| Germ cell mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| 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. |
| US. National Toxicology Program (NTP) Report on Carcinogens | |
| Not listed. | |
| US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) | |
| Not regulated. | |
| Reproductive toxicity | This product is not expected to cause reproductive or developmental effects. |
| Specific target organ toxicity - single exposure | Not classified. |
| Specific target organ toxicity - repeated exposure | Not classified. |
| Aspiration hazard | Not an aspiration hazard. |
| Chronic effects | Not classified. |
| Further information | The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. |

12. Ecological information

Ecotoxicity Contains a substance which causes risk of hazardous effects to the environment.

| Components | Species | Test Results |
|------------------------------------|---------|--|
| MONOETHANOLAMINE (CAS 141-43-5) | | |
| Aquatic | | |
| Fish | LC50 | Rainbow trout,donaldson trout (Oncorhynchus mykiss) 114 - 196 mg/l, 96 hours |
| MONOISOPROPANOLAMINE (CAS 78-96-6) | | |
| Aquatic | | |
| Fish | LC50 | Goldfish (Carassius auratus) 210 mg/l, 96 hours |
| <i>Acute</i> | | |
| Crustacea | EC50 | Daphnia 109 mg/l, 48 hours |
| NEODECANOIC ACID (CAS 26896-20-8) | | |
| Aquatic | | |
| <i>Acute</i> | | |
| Crustacea | EC50 | Daphnia 50 - 1000 mg/l, 48 hours |
| Fish | LC50 | Rainbow trout,donaldson trout (Oncorhynchus mykiss) 100 - 300 mg/l, 96 hours |
| TRIETHANOLAMINE (CAS 102-71-6) | | |
| Aquatic | | |
| Crustacea | EC50 | Water flea (Ceriodaphnia dubia) 565.2 - 658.3 mg/l, 48 hours |
| Fish | LC50 | Fathead minnow (Pimephales promelas) 10610 - 13010 mg/l, 96 hours |

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

| | |
|----------------------|-------|
| MONOETHANOLAMINE | -1.31 |
| MONOISOPROPANOLAMINE | -0.93 |
| TRIETHANOLAMINE | -1 |

Mobility in soil This product is miscible in water.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

| | |
|--|--|
| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| 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 | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |

14. Transport information

| | |
|---|-----------------------------------|
| DOT | Not regulated as dangerous goods. |
| IATA | Not regulated as dangerous goods. |
| IMDG | Not regulated as dangerous goods. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not established. |

15. Regulatory information

| | |
|---|---|
| US federal regulations | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
| TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) | Not regulated. |
| CERCLA Hazardous Substance List (40 CFR 302.4) | Not listed. |
| SARA 304 Emergency release notification | Not regulated. |
| US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) | Not regulated. |
| Superfund Amendments and Reauthorization Act of 1986 (SARA) | |
| Hazard categories | Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No |
| SARA 302 Extremely hazardous substance | Not listed. |
| SARA 311/312 Hazardous chemical | Yes |
| SARA 313 (TRI reporting) | Not regulated. |
| Other federal regulations | |
| Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List | Not regulated. |
| Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) | Not regulated. |
| Safe Drinking Water Act (SDWA) | Not regulated. |
| FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace | |
| MONOISOPROPANOLAMINE (CAS 78-96-6) | Low priority |

Food and Drug Administration (FDA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

MONOETHANOLAMINE (CAS 141-43-5)
MONOISOPROPANOLAMINE (CAS 78-96-6)
TRIETHANOLAMINE (CAS 102-71-6)

US. New Jersey Worker and Community Right-to-Know Act

MONOETHANOLAMINE (CAS 141-43-5)
MONOISOPROPANOLAMINE (CAS 78-96-6)
TRIETHANOLAMINE (CAS 102-71-6)

US. Pennsylvania Worker and Community Right-to-Know Law

MONOETHANOLAMINE (CAS 141-43-5)
MONOISOPROPANOLAMINE (CAS 78-96-6)
TRIETHANOLAMINE (CAS 102-71-6)

US. Rhode Island RTK

Not regulated.

California South Coast Air Quality Management District (SCAQMD) Rule 1144 (VOC Emissions) This product is subject to SCAQMD Rule 1144; it is compliant and may be sold and used in the SCAQMD. The VOC content of the product is 261 g/L, measured by ASTM Method E-1868-10. This product has a specified use dilution VOC limit of 50 g/L, the maximum dilution concentration is 19 % to maintain compliance.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

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) | No |
| 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 this product complies with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last revision

Issue date 04-29-2016

Revision date 08-02-2016

Version # 02

Further information Not available.

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.

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