

SAFETY DATA SHEET

1. Identification

Product identifier OAK KOOL® 644 BLUE
METALWORKING FLUID

Other means of identification

SDS number Not applicable

Recommended use METALWORKING FLUID

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) 513-458-8199

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

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

2. Hazard(s) identification

Physical hazards Corrosive to metals Category 1

Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2
Sensitization, skin Category 1
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement May be corrosive to metals. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. May cause respiratory irritation.

Precautionary statement

Prevention Keep only in original container. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response IF exposed or concerned: 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. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Take off contaminated clothing and wash before reuse. Absorb spillage to prevent material damage.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Store away from incompatible materials. Store in accordance with local/regional/national/international regulation.

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

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

Supplemental information None.

3. Composition/information on ingredients

Mixtures

| Chemical name | Common name and synonyms | CAS number | % |
|--|--------------------------|------------|----------|
| TRIETHANOLAMINE | | 102-71-6 | 5 - 10 |
| HEXAHYDRO-1,3,5-TRIS (2-HYDROXYETHYL)-S- TRIAZINE | | 4719-04-4 | 1 - 5 |
| MONOETHANOLAMINE | | 141-43-5 | 1 - 5 |
| MONOISOPROPANOLAMINE | | 78-96-6 | 1 - 5 |
| Other components below reportable levels | | | 60 - 100 |

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

4. First-aid measures

| | |
|---|--|
| 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. Under normal conditions of intended use, this material is not expected to be an inhalation hazard. |
| 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 with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Continue rinsing. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth thoroughly. 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 | Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Symptoms may be delayed. |
| General information | Wash contaminated clothing before reuse. If exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance. |

5. Fire-fighting measures

| | |
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| Suitable extinguishing media | Water fog. Foam. Dry chemical 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. |

6. Accidental release measures

| | |
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| 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. 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 spillage to prevent material damage. Prevent entry into waterways, sewer, basements or confined areas. Clean up in accordance with all applicable regulations. 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

Avoid discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment. 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 breathing mist or vapor. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. To maintain product quality, do not store in heat or direct sunlight. Store in a cool, dry place out of direct sunlight. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS). Keep this material away from food, drink and animal feed. 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. 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 |

US. NIOSH: Pocket Guide to Chemical Hazards

| | Type | Value |
|------------------------------------|------|------------------|
| MONOETHANOLAMINE (CAS 141-43-5) | STEL | 15 mg/m3 |
| | | 6 ppm |
| | TWA | 8 mg/m3 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/m3 |
| 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 fountain and emergency showers are recommended.

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 and gloves.

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. Contaminated work clothing should not be allowed out of the workplace. |

9. Physical and chemical properties

| | |
|---|-------------------------|
| Appearance | CLEAR |
| Physical state | Liquid. |
| Form | Liquid. |
| Color | Not available. |
| Odor | CHEMICAL |
| Odor threshold | Not available. |
| pH | 10.0 |
| Melting point/freezing point | < 30 °F (< -1.1 °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 | |
| pH in aqueous solution | 9.0 @ 5% |
| Specific gravity | 1.043 |
| VOC ASTM D2369 | 9 % |

10. Stability and reactivity

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|---|---|
| Reactivity | May be corrosive to metals. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur. |
| Conditions to avoid | Heat, flames and sparks. Contact with incompatible materials. |
| Incompatible materials | Aluminum. Do not add sodium nitrite or other nitrosating agents which may form cancer causing nitrosamines. Acids. Avoid contact with oxidizers or reducing agents. |
| Hazardous decomposition products | Smoke, fumes, oxides of nitrogen, and oxides of carbon |

11. Toxicological information

Information on likely routes of exposure

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|---------------------|--|
| Inhalation | Prolonged inhalation may be harmful. May cause irritation to the respiratory system. |
| Skin contact | May cause an allergic skin reaction. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. |
| Eye contact | Causes serious eye irritation. |
| Ingestion | May be harmful if swallowed. |

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Rash.

Information on toxicological effects

Acute toxicity May cause an allergic skin reaction. May cause respiratory irritation. Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

| Components | Species | Test Results |
|------------------------------------|------------|----------------------------------|
| 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 |
| MONOISOPROPANOLAMINE (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 |
| 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 |

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

Skin corrosion/irritation Causes skin irritation. Prolonged skin contact may cause temporary irritation. Defatting, drying and cracking of skin.

Serious eye damage/eye irritation Causes serious eye irritation. Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization May cause an allergic skin reaction.

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. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

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| Reproductive toxicity | This product is not expected to cause reproductive or developmental effects. |
| Specific target organ toxicity - single exposure | May cause respiratory irritation. |
| Specific target organ toxicity - repeated exposure | Not classified. |
| Aspiration hazard | Not an aspiration hazard. |
| Chronic effects | May be harmful if absorbed through skin. Prolonged inhalation may be harmful. Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans. |

12. Ecological information

Ecotoxicity The product is 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.

| 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 |
| 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 No data available.

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

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|--|--|
| 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. |
| 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 | 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

DOT

| | |
|-------------------------------------|--|
| UN number | UN3267 |
| UN proper shipping name | Corrosive liquid, basic, organic, n.o.s. (TRIETHANOLAMINE, MONOETHANOLAMINE) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Label(s) | 8 |
| Packing group | III |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Special provisions | IB3, T7, TP1, TP28 |
| Packaging exceptions | 154 |
| Packaging non bulk | 203 |
| Packaging bulk | 241 |

Supplemental Information: This Product Concentrate is corrosive only to Aluminum. Per 49CFR 173.154(d)(1) Except for a hazardous substance, a hazardous waste, or a marine pollutant, a material classed as Class 8 Packing Group III, solely because of its corrosive effect on aluminum - is not subject to any other requirements of this subchapter when transported by motor vehicle or rail car in packaging that will not react or be degraded by the corrosive material.

IATA

| | |
|-------------------------------------|--|
| UN number | UN3267 |
| UN proper shipping name | Corrosive liquid, basic, organic, n.o.s. (TRIETHANOLAMINE, MONOETHANOLAMINE) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Packing group | III |
| Environmental hazards | No. |
| ERG Code | 8L |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Other information | |
| Passenger and cargo aircraft | Allowed. |
| Cargo aircraft only | Allowed. |

IMDG

| | |
|-------------------------------------|--|
| UN number | UN3267 |
| UN proper shipping name | CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (TRIETHANOLAMINE, MONOETHANOLAMINE) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Packing group | III |
| Environmental hazards | |
| Marine pollutant | No. |
| EmS | F-A, S-B |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

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

DOT





15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. It may be reportable under the provisions of SARA Sections 311 and 312 if specific threshold criteria are met or exceeded.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

HEXAHYDRO-1,3,5-TRIS (2-HYDROXYETHYL)-S-TRIAZINE (CAS 4719-04-4) 1.0 % One-Time Export Notification only.

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 listed.

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.

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 81 g/L, measured by ASTM Method E-1868-10. This product has a specified use dilution VOC limit of 75 g/L, the maximum dilution concentration is 92 % 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) | 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) | No |
| 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 05-13-2015

Version # 01

Further information Not available.

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 Product and Company Identification: Product Codes
Hazards Identification: US Hazard Categories
Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Transport Information: Proper Shipping Name/Packing Group
Regulatory Information: United States
HazReg Data: North America
GHS: Classification