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### Section 1. Supplier Information

**CMI Chemical Corporation**  
12336 Emerson Drive  
Brighton, MI 48116  
(248) 587-5600  
**Emergency Telephone: 1-800-424-9300**

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### Section 2. Hazardous Ingredients

<u>Hazardous Component(s)</u>	<u>CAS #</u>	<u>PEL TWA</u>	<u>PEL Ceiling</u>	<u>TLV TWA</u>	<u>TLV STEL</u>	<u>MFG Limits</u>	<u>WGT %</u>
N-Methyl-2-pyrrolidone	872-50-4	N/E	N/E	N/E	N/E	N/E	40 - 70
Glycol ether DPM acetate	088917-22-	N/E	N/E	N/E	N/E	N/E	10 - 30
Monoethanolamine	141-43-5	3 ppm	N/E	3 ppm	6 ppm	N/E	< 10

N/A = Not Applicable; N/E = Not Established; \* = Mists; # = Skin; ' = Respirable Dust; " = Total Dust; ^ = Vapor; \*\* = Fumes; C = Ceiling Limit

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All components of this product are listed on the Toxic Substances Control Act (TSCA) Inventory and the Canadian Domestic Substances List (DSL), or are exempt from the listing.

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### Section 3. Hazards Identification

#### Primary Routes of Entry

Inhalation: YES  
Skin: YES  
Ingestion: YES

#### Hazardous Materials Information System (HMIS) Ratings

Health: \* 2  
Fire: 1  
Reactivity: 0  
0 = Minimal  
1 = Slight  
2 = Moderate  
3 = Serious  
4 = Severe  
\* = Chronic Hazard

#### Signs of Symptoms of Exposure:

**INHALATION:** Exposure to mists may cause coughing, sneezing, and other symptoms of respiratory tract irritation. Overexposure may result in lung tissue damage due to corrosive effects.

**SKIN:** Can be a severe skin irritant. May be corrosive and cause severe burns if not washed immediately.

**EYES:** This product is destructive to eye tissues on contact. Will cause severe burns that result in damage to the eyes and even blindness.

**INGESTION:** This product, if swallowed, can cause severe burns and complete tissue perforation of mucous membranes of the mouth, throat, esophagus, and stomach.

#### Chemical Listed as Potential Carcinogens:

**PC-4950 -- PARTS/MOLD CLEANER**

NTP: NO

IARC: NO

OSHA: NO

Target Organs: Eyes, skin and respiratory system

**Section 4. Emergency And First Aid Procedures**

**INHALATION:** If adverse effects such as dizziness, nausea, or irritation are noted, move person to fresh air. If not breathing, give artificial respiration. Get medical attention!

**SKIN:** Immediately wash skin with large amounts of soap and water. Remove contaminated clothing and shoes; wash before reuse. Get medical attention if irritation persists after washing.

**EYES: THE OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY, THEN SEEK MEDICAL ATTENTION!** Immediately flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Washing eyes within several seconds is essential to achieve maximum effectiveness. **SEEK MEDICAL ATTENTION IMMEDIATELY!**

**INGESTION: DO NOT INDUCE VOMITING!** Contact a physician immediately!

**Section 5. Fire Fighting Measures**

Flash Point: 205 °F

Method Used: Tagliabue Closed Cup

Flammable Limits in Air % by Volume: LEL: N/D

UEL: N/D

Extinguisher Media: Water spray, dry chemical, carbon dioxide and foam.

**Special Fire Fighting Procedures:** Firefighters should wear a self-contained breathing apparatus with a full facepiece operated in pressure demand or other positive pressure mode, and protective clothing.

**Unusual Fire And Explosion Hazards:** Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited at locations distant from handling point.

**Section 6. Accidental Release Measures**

If material is spilled, absorb with sand, earth, or similar inert material. Place in closed, labeled containers for proper disposal.

CERCLA (Superfund) Reportable Quantity (in lbs N/A)

**Section 7. Handling and Storage**

**Handling:** Avoid contact with skin and eyes; wash thoroughly after handling. Avoid breathing vapor; use with adequate ventilation.

**Storage:** Store in a dry location at room temperature. Keep container closed and maintain all original markings and labels.

**Other:** Do not reuse container without recycling or reconditioning. Handle empty containers as if they were full.

**Section 8. Exposure Controls and Personal Protection**

**Respiratory Protection:** Use NIOSH / MSHA approved respirator where high vapor or mist concentrations are present.

**Local Exhaust:** None normally required. Local exhaust may be needed under special circumstances such as poorly ventilated areas, evaporation from large surfaces, spraying, heating, etc.

**Mechanical Exhaust:** Mechanical ventilation should be sufficient to maintain exposure levels below exposure limits.

**Protective Gloves:** Wear chemical resistant gloves.

**PC-4950 -- PARTS/MOLD CLEANER**

Eye Protection: Safety glasses with side shields. Do NOT wear contact lenses. Chemical goggles and/or faceshield should be worn where splashing is possible.

Other Protection: Eye wash and safety shower should be readily available.

Hygienic Practices: Avoid contact with skin and avoid breathing vapors or mist. Do not eat, drink, or smoke while using this product. Wash up prior to eating, drinking, or using the restroom.

**Section 9. Physical and Chemical Properties**

Boiling Point: >205 °F

Specific Gravity (H<sub>2</sub>O=1): 1.02-1.05

Vapor Pressure (mm Hg): N/D

Vapor Density (air=1) > 1

Solubility in Water: Appreciable

Reactivity in Water: None

Weight per Gallon (lb/gal): 8.5 - 8.8 lbs/gal

% Volatile by Volume: > 99.5

% Solid by Weight: < 0.5

Appearance and Odor: Colorless to pale yellow liquid with a mild amine odor.

Theoretical VOC: N/D  
(>0.1 mm Hg @ 20 ° C)

Analytical VOC : 6.8 - 7.0 lbs/gal  
(EPA method 24)

pH: 11 - 12

Degree of water solubility:  
Negligible = Less than 0.1%  
Slight = 0.1% - 1%  
Moderate = 1% - 10%  
Appreciable = More than 10%  
Complete = 100%

**Section 10. Stability and Reactivity**

Stability: Stable. Hazard Polymerization: Will not occur

Conditions to Avoid: None known.

Incompatibility (Materials to Avoid): Strong acids, bases, and oxidizing agents

Hazardous Decomposition Products: Various hydrocarbons and oxides of carbon.

**Section 11. Toxicological Information**

N-methyl-2-pyrrolidone [CASRN 000872-50-4]

**ACUTE TOXICITY**

Oral LD50 (rat) = 4,990 mg/kg (moderately toxic) Eye Irritation (rabbit) - markedly irritating  
Oral LD50 (mouse) = 5,270 mg/kg (slightly toxic) Skin irritation (rabbit) - markedly irritating  
Inhalation LC50 (rat) > 5.1 mg/L, 4 hr (moderately toxic) Inhalation safety screen (rat), 8 hr - slightly irritating (No deaths)

Acute Overexposure Effects: Contact with the liquid can result in irritation. Skin contact should be avoided. Prolonged skin contact may result in redness and dermatitis. NMP is moderately toxic by all routes of exposure; however, due to its low vapor pressure, dermal exposure represents the primary hazard in most settings. Contact with the liquid results in moderate eye irritation and may cause temporary corneal clouding. Skin contact results in mild irritation; prolonged skin contact may cause redness and dermatitis. Inhalation of the vapors of NMP may result in respiratory irritation. Accidental ingestion of the liquid causes gastric disturbances and may result in nausea and vomiting.

Reproductive / Development Effects: In animal studies NMP was embryotoxic by the oral, dermal and intraperitoneal routes, but only after repeated high doses that approached the LD50 or were maternally toxic. Embryotoxicity without maternal toxicity was observed at a high concentration in one rat inhalation study, but not in others. Testicular effects in rats were noted after repeated, high-dose oral and inhalation exposures. NMP was not carcinogenic in rats receiving lifetime exposures via inhalation (100 ppm) or the diet. NMP was not fetotoxic or teratogenic in rats exposed to NMP vapors up to 0.36 mg/l during gestation (Fund. and Appl. Tox. 9:222-235, 1987). NMP has been reported to cause aneuploidy in saccharomyces, but is not mutagenic in the Ames test (Env. and Molec. Mut. 11(1) 31-40, 1988). [1-13,12,15-062001], [11,24-13,12,15-110200]

Glycol ether DPM acetate

Oral LD50 (rats) > 5000 mg/kg  
Dermal LD50 (rabbits) > 5000 mg/kg  
Monoethanolamine [CASRN 000141-43-5]

#### ACUTE TOXICITY

Oral LD50 (rat) = 1.00 - 2.00 g/kg Eye irritation (rabbit): Draize; 80.0 - 110 ; extreme irritation  
Dermal LD50 (rabbit) > 1.6 g/kg Skin irritation (rabbit): Draize; 6.5- 8.0 ; corrosive

Prolonged and repeated ingestion of monoethanolamine has caused kidney and liver damage in laboratory animals. [7,20-12,4,0-091200], [3-12-092600] & [20,2-12-061900]

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#### Section 12. Ecological Information

N-methyl-2-pyrrolidone [CASRN 000872-50-4]

#### ECOTOXICITY

96 hr LC50 (golden orfe) = 4,000 mg/l, static 24 hr EC/LC50 (daphnia magna) > 1000 mg/l  
72 hr EC/LC50 (algal) > 500 mg/l IC50 (bacteria) > 9000 mg/l

Fate: Abiotic Degradability: Photolysis Half-Life 5.2 hrs. Biotic Degradability: BOD 92% (14 day).  
Theo. BOD (Modified MITI Test) 73 % (28 day)  
Elimination (method not specified) > 90 %, Readily Biodegradable  
Chemical Oxygen Demand: 1600 mg/l, Readily Biodegradable  
Biological Oxygen Demand, 5 day: 1100 mg/l, Readily Biodegradable  
Octanol/Water partition coefficient (log POW): -0.46 [11,24-13,12,15-110200], [1-13,12,15-062001]  
Glycol ether DPM acetate

MOVEMENT & PARTITIONING: Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Log octanol/water partition coefficient (log Pow) is estimated using a structural fragment method to be 0.66. Potential for mobility in soil is very high (Koc between 0 and 50). Soil organic carbon/water partition coefficient (Koc) is estimated to be 4.0-10. Henry's Law Constant (H) is estimated to be 2.03E-07 atm-m<sup>3</sup>/mol.

DEGRADATION & PERSISTENCE: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD >40%). The 28-Day Biochemical Oxygen Demand (BOD28) is 1.30 p/p. The 20-Day Biochemical Oxygen Demand (BOD20) is 1.20 p/p. The 10-Day Biochemical Oxygen Demand (BOD10) is 0.55 p/p. The 5-Day Biochemical Oxygen Demand (BOD5) is below detection limits. Theoretical Oxygen Demand (ThOD) is calculated to be 1.94 p/p. Biodegradation rate may increase in soil and/or water with acclimation.

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Monoethanolamine [CASRN 000141-43-5]

**ECOTOXICITY**

48 hr - LC50 (daphnia) = 33-93 mg/L      96 hr - LC50 (fathead minnow) = 125-206 mg/l  
IC50 (bacteria)                              > 700 mg/l  
IC50 Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is >1000 mg/L.

**FATE**

BOD Day 5 - 52-60%      Theoretical Oxygen Demand (ThOD): 1.31 mg/mg, calc.  
BOD Day 10 - 73-75%      Octanol/Water Partition Coefficient : -1.31, measured  
BOD Day 20 - 90-100 %      Henry's law constant (H): 2.45E-7 atm m3/mole (estimated)  
Log Koc: 0.70 (estimated)  
CO2 Evolution test (Modified Sturm test, OECD Test 301 B) after 28 days: 97%. Modified OECD  
Screening test (OECD Test 301 E) after 28 days: 94%.  
Manometric Respirometry test (OECD Test 301 F) after 28 days: > 70%  
[7,20-12,4,0-091200], [3-12-092600] & [20,2-12-061900]

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**Section 13. Disposal Considerations**

Waste Disposal Methods (Federal, State, Local):

In accordance with all federal, state and local requirements.

RCRA Hazardous Waste Number: N/A

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**Section 14. Transport Information**

Hazardous Material Description:

(Proper shipping name, hazard class, hazard ID#, packing group)

Domestic ground non-bulk: ETHANOLAMINE SOLUTION, 8, UN2491, PG III

Domestic ground bulk:            ETHANOLAMINE SOLUTION, 8, UN2491, PG III

International:                      ETHANOLAMINE SOLUTION, 8, UN2491, PG III

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**Section 15. Regulatory Information**

SARA 313 Information

This product contains the following chemical(s) above deminis concentrations and may be subject to reporting under section 313:

n-Methyl-2-pyrrolidone, CAS# 872-50-4, 40 - 70

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**Section 16. Other Information**

This MSDS contains revisions in the following sections: New format

Prepared by: John DiCerbo    Quality, EH&S Manager

Revised by: Andrew J. Thomas    Chemist

The development of this Material Safety Data Sheet (MSDS) relies upon information provided to us by each of our raw material suppliers. This MSDS will be updated as changes occur to their MSDS(s).

We believe the recommendations and technical information contained herein to be accurate. However, they are given without warranty or guarantee, expressed or implied, and we assume no responsibility for losses or damage, direct or indirect, as a result of their use.