

INCAST CLEAN 1900 -- WAX PATTERN CLEANER

Section 1. Supplier Information

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

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>
d-Limonene	5989-27-5	N/E	N/E	N/E	N/E	N/E	10 - 50
2-(2-Butoxyethoxy) ethanol	112-34-5	N/E	N/E	N/E	N/E	35 ppm	< 20
Diethanolamine	111-42-2	N/E	N/E	0.46 ppm	N/E	N/E	< 5

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

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.

Section 3. Hazards Identification

Primary Routes of Entry

Inhalation: YES
Skin: YES
Ingestion: YES

Hazardous Materials Information System (HMIS) Ratings

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

Signs of Symptoms of Exposure:

INHALATION: Vapors are irritating to the nose, throat, and respiratory tract, and may produce headache and nausea in areas of poor ventilation.

SKIN: Material is mildly irritating to the skin. Prolonged or repeated contact may cause defatting and drying of the skin, resulting in irritation and dermatitis.

EYES: Vapors are slightly uncomfortable. Splashes can be irritating, will cause painful burning or stinging of eyes and lids, watering of eyes and inflammation of conjunctiva.

INGESTION: Ingestion of large amounts causes gastric disturbances. Nausea and vomiting may result.

Chemical Listed as Potential Carcinogens:

NTP: NO

IARC: NO

OSHA: NO

INCAST CLEAN 1900 -- WAX PATTERN CLEANER

Target Organs: Liver, kidneys, and blood.

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: Flush eyes immediately with water for at least 15 minutes. If irritation persists, call a physician.

INGESTION: Call a physician or emergency medical facility immediately!

Section 5. Fire Fighting Measures

Flash Point: 125 ° F (minimum) Method Used: Pensky-Martens Closed Cup

Flammable Limits in Air % by Volume: LEL: N/E UEL: N/E

Extinguisher Media: Carbon dioxide, dry chemical, foam, or water fog.

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, eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area; place in closed containers for disposal. Ventilate confined spaces. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas. Continue to observe precautions for volatile, combustible vapors from absorbed material.

CERCLA (Superfund) Reportable Quantity (in lbs Diethanolamine (100 lb. RQ) - Product RQ:
4545 lbs. (572 gallons)

Section 7. Handling and Storage

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

Storage: KEEP FROM FREEZING! Store in a dry location at room temperature. Keep container closed and maintain all original markings and labels. Do not use aluminum or galvanized steel for storage, pumping or transfer.

Other: CAUTION! Do not use cutting or welding torches on containers, even when empty. Containers, even those that have been emptied, will retain product residue and vapors. 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: Special ventilation is suggested at points where vapors can be expected to escape to the workplace air.

Mechanical Exhaust: Mechanical ventilation should be sufficient to maintain exposure levels

INCAST CLEAN 1900 -- WAX PATTERN CLEANER

below exposure limits.

Protective Gloves: Wear chemical resistant gloves.

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. Wear a chemical resistant apron and boots where splashing is possible.

Hygienic Practices: Protective equipment and clothing should be selected, used and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer. Do not eat, drink, or smoke while using this product. Wash hands prior to eating, drinking, smoking, or using restrooms. Cleanse skin thoroughly after contact, before breaks and meals, and at the end of the work shift.

Section 9. Physical and Chemical Properties

Boiling Point:	212 ° F (initial)	Degree of water solubility:
Specific Gravity (H ₂ O=1):	0.94-0.95	Negligible = Less than 0.1%
Vapor Pressure (mm Hg):	N/E	Slight = 0.1% - 1%
Vapor Density (air=1)	> 2.3	Moderate = 1% - 10%
Solubility in Water:	Appreciable.	Appreciable = More than 10%
Reactivity in Water:	None.	Complete = 100%
Weight per Gallon (lb/gal):	7.8 - 8.1 lbs/gal	
% Volatile by Volume:	80-90	
% Solid by Weight:	10-20	
Appearance and Odor:	Pale yellow liquid with a citrus odor.	
Theoretical VOC: (>0.1 mm Hg @ 20 ° C)	2.2 - 2.5 lbs/gal	
Analytical VOC : (EPA method 24)	3.4 - 3.6 lbs/gal	
pH:	9.0-10.0	

Section 10. Stability and Reactivity

Stability: Stable. Hazard Polymerization: Will not occur.

Conditions to Avoid: COMBUSTIBLE! Keep from heat, sparks, or open flame.

Incompatibility (Materials to Avoid): Strong oxidizing agents and acidic agents, including acidic clays; D-Limonene reacts explosively with iodine pentafluoroethylene.

Hazardous Decomposition Products: Nitrogen oxides, unidentified organic compounds, ammonia vapors, and oxides of carbon.

Section 11. Toxicological Information

d-Limonene [CASRN 005989-27-5]

ACUTE TOXICITY

Oral LD50 (rat) > 5g/kg Eye irritation (rabbit): Severely irritating.
Dermal LD50 (rabbit) > 5 g/kg Dermal irritation (rabbit): Severely irritating.
Oral TDLO (mouse) = 67 mg/kg/39w-l:ETA

INCAST CLEAN 1900 -- WAX PATTERN CLEANER

IPR TDLO (mouse) = 4800 mg/kg/8w-l:ETA

CHRONIC EFFECTS: Prolonged or repeated exposure can cause drying, defatting, and dermatitis of skin. d-limonene is NOT listed as carcinogenic by OSHA, NTP, IARC or ACGIH. FDA and WHMIS list d-limonene as GRAS - "generally recognized as safe". [5,2-3,11-031197] ; 15,3-3,11-0198

Ethanol, 2-(2-butoxyethoxy) [CASRN 000112-34-5]

ACUTE TOXICITY

Oral LD50 (rat)	= 5.1-5.7 g/kg	Eye Irritation: Moderate [Rabbit]
Oral LD50 (mouse)	= 2.4 g/kg	Skin Irritation: Slight [Rabbit]
Dermal LD50 (rabbit)	~ 4 g/kg	Inhalation LC50 (rat) > 18 ppm; 7 hours

Other Information: Kidney effects in male rats were observed in laboratory animals exposed to this material. Effects were consistent with male rat hyaline droplet nephropathy, which is of questionable significance to human health.

Mutagenicity: Animal mutagenicity studies were negative. In vitro mutagenicity studies were negative in some cases and positive in other cases. [3-3,3,1,6,4-121600], [18,7-1,3,6,4-020901], & [4,16-6,4,3,1-022001]

Diethanolamine:

TOXICITY DATA: Recently conducted National Toxicology Program (NTP) subchronic toxicity studies with diethanolamine (DEA) in rats and mice suggest that the kidney, liver, and blood are potential target systems for DEA toxicity, following both oral and dermal exposures. In addition, effects in the brain and spinal cord of rats, and in the hearts of mice were observed only at extremely high dosages of DEA. Effects on several other tissues were reported, although these occurred only at dose levels which caused severe debilitation of the animals, and were considered secondary effects (not directly caused by DEA) by the NTP peer review pathology group. Furthermore, most of the effects reported in these studies were observed in only one of the species tested, and clear dose response trends were not always evident in treated groups, making the relevance of these findings across species questionable. NTP has initiated chronic studies in rats and mice by the dermal route of exposure. These studies may clarify the results of the subchronic studies as well as provide information on the potential carcinogenicity of DEA. Preliminary findings from a developmental toxicity study in the rat with dermal application of DEA has shown that this chemical has a potential to cause developmental delay in the fetus. The effect seen was a general delay in ossification (i.e., bone substance formation) in the skull at doses shown to cause severe maternal toxicity. A definitive developmental study is currently underway to clarify the above findings. [7,20-H,F,A,J,J,19,I,F-070194]

Section 12. Ecological Information

d-Limonene [CASRN 005989-27-5]

Ecotoxicological Information: Product may be toxic to aquatic organisms. [5,2-3,11-031197]

INCAST CLEAN 1900 -- WAX PATTERN CLEANER

Ethanol, 2-(2-butoxyethoxy) [CASRN 000112-34-5]

ECOTOXICITY

LC50 (Poecilia reticulata) = 1150 mg/L LC50 (Lepomis macrochirus) = 1300 mg/L LC50 (Leuciscus idus) = 1805-2304 mg/L LC50 (Menidia beryllina) = 2000 mg/L
LC50 (Carassius auratus) = 2700 mg/L LC50 (Daphnia magna) = 2850 mg/L
LC50 (Notropis atherinoides) > 500 mg/L Growth inhibition IC50 (bacteria) = 255 mg/L

MOVEMENT & PARTITIONING: Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Log octanol/water partition coefficient (log Pow) is 0.56. Potential for mobility in soil is high (Koc between 50 and 150). Log soil organic carbon partition coefficient (log Koc) is estimated to be 1.88. Henry's Law Constant (H) is estimated to be 1.52E-9 atm.m³/mol.

DEGRADATION & PERSISTENCE: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD greater than 40%). Degradation is expected in the atmospheric environment within minutes to hours. 5-Day biochemical oxygen demand (BOD5) is 0.05 p/p. 10-Day biochemical oxygen demand (BOD10) is 0.39 p/p. 20-Day biochemical oxygen demand (BOD20) is 1.08 p/p. Theoretical oxygen demand (ThOD) is calculated to be 2.17 p/p. Biodegradation rate may increase in soil and/or water with acclimation. [3-3,3,1,6,4-121600]

Section 13. Disposal Considerations

Waste Disposal Methods (Federal, State, Local):

In accordance with all federal, state and local requirements.

RCRA Hazardous Waste Number: D001

Section 14. Transport Information

Hazardous Material Description:

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

Domestic ground non-bulk: NOT REGULATED

Domestic ground bulk: COMBUSTIBLE LIQUID, N.O.S., NA1993, PG III (RQ - DIETHANOLAMINE, D-LIMONENE)

International: FLAMMABLE LIQUID, N.O.S., 3, UN1993, PG III (D-LIMONENE)

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:

Reportable Category: Certain glycol ethers, < 20 %.

Diethanolamine, CAS# 111-42-2, < 5%

Section 16. Other Information

This MSDS contains revisions in the following sections: New product

Prepared by: Andrew J. Thomas Chemist

Revised by:

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.