



MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: MUO Heavy Duty Degreaser (aerosol)

Product Number (s): 03995

Product Use: Heavy duty degreaser

Manufacturer / Supplier Contact Information:

In United States:

CRC Industries, Inc.

885 Louis Drive

Warminster, PA 18974

www.crcindustries.com

1-215-674-4300 (General)

(800) 521-3168 (Technical)

(800) 272-4620 (Customer Service)

In Canada:

CRC Canada Co.

2-1246 Lorimar Drive

Mississauga, Ontario L5S 1R2

www.crc-canada.ca

1-905-670-2291

In Mexico:

CRC Industries Mexico

Av. Benito Juárez 4055 G

Colonia Orquídea

San Luís Potosí, SLP CP 78394

www.crc-mexico.com

52-444-824-1666

24-Hr Emergency – CHEMTREC: (800) 424-9300 or (703) 527-3887

Section 2: Hazards Identification

Emergency Overview

WARNING: Vapor Harmful. Contents Under Pressure.

As defined by OSHA's Hazard Communication Standard, this product is hazardous.

Appearance & Odor: Colorless liquid, irritation odor at high concentrations.

Potential Health Effects:

ACUTE EFFECTS:

EYE: Liquid contact will produce mild eye irritation. Vapors may also cause irritation. Corneal injury is unlikely.

SKIN: Prolonged or repeated exposure can cause skin irritation, drying, flaking, defatting and possibly dermatitis or skin burns. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

INHALATION: Exposure to vapors may cause respiratory tract irritation. High concentrations may cause central nervous system depression. Symptoms include dizziness and loss of coordination and could lead to unconsciousness or death. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability.

INGESTION: Single dose toxicity is low. Swallowing an excessive amount can cause gastrointestinal disturbances and central nervous system depression. If aspirated into lungs, during swallowing or vomiting, liquid may be rapidly absorbed through the lungs and result in injury to other body systems.

CHRONIC EFFECTS: Chronic immersion of skin in this liquid may lead to absorption through skin. This may cause numbness in the immersed area. Excessive inhalation of vapors may increase sensitivity to epinephrine and increase myocardial irritability.

TARGET ORGANS: central nervous system; liver, kidney effects seen in laboratory animals

Medical Conditions Aggravated by Exposure: pre-existing skin conditions, respiratory conditions

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See Section 11 for toxicology and carcinogenicity information on product ingredients.

Section 3: Composition/Information on Ingredients

COMPONENT	CAS NUMBER	% by Wt.
Tetrachloroethylene (PERC)	127-18-4	50 - 60
Trichloroethylene (TCE)	79-01-6	40 - 50
1,2-Butylene Oxide	106-88-7	< 0.5
Carbon dioxide	124-38-9	< 5

Section 4: First Aid Measures

Eye Contact: Immediately flush with plenty of water for 15 minutes. Call a physician if irritation persists.

Skin Contact: Remove contaminated clothing and wash affected area with soap and water. Call a physician if irritation persists. Wash contaminated clothing prior to re-use.

Inhalation: Remove person to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician.

Ingestion: Do NOT induce vomiting. Contact physician or poison control center.

Note to Physicians: Because rapid absorption may occur through lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary. No specific antidote.

Section 5: Fire-Fighting Measures

Flammable Properties: This product is nonflammable in accordance with aerosol flammability definitions. (See 16 CFR 1500.3(c)(6)) However, it can be made to burn under certain conditions.

Flash Point:	None (TCC)	Upper Explosive Limit:	44.8%
Autoignition Temperature:	ND	Lower Explosive Limit:	8.0%

Fire and Explosion Data:

Suitable Extinguishing Media: Use media suitable for surrounding fire.

Products of Combustion: Hydrogen chloride, trace amounts of phosgene, chlorine, and carbon monoxide.

Explosion Hazards: Aerosol containers, when exposed to heat from fire, may build pressure and explode.

Protection of Fire-Fighters: Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against suffocation and possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

Section 6: Accidental Release Measures

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Personal Precautions: Use personal protection recommended in Section 8. Do NOT breathe vapors.

Environmental Precautions: Take precautions to prevent contamination of ground and surface waters. Do not flush into sewers or storm drains.

Methods for Containment & Clean-up: Dike area to contain spill. Ventilate the area with fresh air. If in confined space or limited air circulation area, clean-up workers should wear appropriate respiratory protection. Recover or absorb spilled material using an absorbent designed for chemical spills. Place used absorbents into proper waste containers.

Section 7: Handling and Storage

Handling Procedures: Prevent skin and eye contact. Wash hands after use and before contacting food. Avoid breathing vapors. Vapors are heavier than air and will collect in low areas or confined spaces. Make sure ventilation removes vapors from low areas. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. For product use instructions, please see the product label.

Storage Procedures: Store in a cool dry area out of direct sunlight. Aerosol cans must be maintained below 120 F to prevent cans from rupturing.

Aerosol Storage Level: I

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines:

COMPONENT	OSHA		ACGIH		OTHER		UNIT
	TWA	STEL	TWA	STEL	TWA	SOURCE	
Tetrachloroethylene	100	NE	25	100	NE		ppm
Trichloroethylene	100	200 (v)	10	25	5	mfr	ppm
1,2-Butylene oxide	N.E.	N.E.	N.E.	N.E.	2	AIHA	ppm
Carbon dioxide	5000	30000 v	5000	30,000	NE		ppm
N.E. – Not Established (c) – ceiling (s) – skin (v) – vacated							

mfr – manufacturer's recommendation

Controls and Protection:

Engineering Controls: Area should have ventilation to provide fresh air. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at the source, preventing dispersion into the general work area. Use mechanical means if necessary to maintain vapor levels below the exposure guidelines. If working in a confined space, follow applicable OSHA regulations.

Respiratory Protection: None required for normal work where adequate ventilation is provided. If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with organic vapor cartridges. Air monitoring is needed to determine actual employee exposure levels. Use a self-contained breathing apparatus in confined spaces and for emergencies.

Eye/face Protection: For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.

Skin Protection: Use protective gloves such as PVA or Viton. Also, use full protective clothing if there is

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prolonged or repeated contact of liquid with skin.

Section 9: Physical and Chemical Properties

Physical State: liquid

Color: colorless

Odor: solvent odor

Odor Threshold: ND

Specific Gravity: 1.544

Initial Boiling Point: 189°F

Freezing Point: ND

Vapor Pressure: > 12 mmHg @ 68°F

Vapor Density: > 4 (air = 1)

Evaporation Rate: very fast

Solubility: slight

Coefficient of water/oil distribution: ND

pH: NA

Volatile Organic Compounds: wt %: 43.9 g/L: 677.8 lbs./gal: 5.65

Section 10: Stability and Reactivity

Stability: Stable

Conditions to Avoid: Avoid direct sunlight or ultraviolet sources. Avoid open flames, welding arcs, and other high temperature sources which induce thermal decomposition.

Incompatible Materials: Avoid contact with metals such as: aluminum powders, magnesium powders, potassium, sodium, and zinc powder. Avoid unintended contact with amines. Avoid contact with strong bases and strong oxidizers.

Hazardous Decomposition Products: Hydrogen chloride, trace amounts of chlorine and phosgene

Possibility of Hazardous Reactions: No

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. The following information is available for components of this product.

Acute Toxicity:

Component	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Tetrachloroethylene	2629 mg/kg	> 10 g/kg	5200 mg/kg/4H
Trichloroethylene	4920 mg/kg	10,000 mg/kg	12,500 ppm/4H
1,2-Butylene oxide	500 mg/kg	2100 µL/kg	6300 mg/m ³ /4H
Carbon dioxide	No data	No data	470,000 ppm/30M

Chronic Toxicity:

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<u>Component</u>	<u>OSHA Carcinogen</u>	<u>IARC Carcinogen</u>	<u>NTP Carcinogen</u>	<u>Irritant</u>	<u>Sensitizer</u>
Tetrachloroethylene	No	Group 2A	Anticipated Carcinogen	E (mild) / S (severe)	No
Trichloroethylene	No	Group 2A	Anticipated Carcinogen	E (moderate) / S (mild)	Unknown
1,2-Butylene oxide	No	Group 2B	No	E (mild) / S (mild) / R (mild)	Unknown
Carbon dioxide	No	No	No	None	No

E – Eye	S – Skin	R - Respiratory
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Reproductive Toxicity: No information available

Teratogenicity: No information available

Mutagenicity: Tetrachloroethylene in vitro studies were negative
animal studies were negative
Trichloroethylene in vitro mutagenicity studies were negative
animal mutagenicity studies were predominantly negative

Synergistic Effects: No information available

Section 12: Ecological Information

Ecological studies have not been conducted for this product. The following information is available for components of this product.

Ecotoxicity: trichloroethylene -- 96 Hr LC50 fathead minnow: 44.1 mg/L (flow-through)
tetrachloroethylene -- 96 Hr LC50 fathead minnow: 13.4 mg/L (flow-through)
Persistence / Degradability: Biodegradation may occur under both aerobic and anaerobic conditions.
Bioaccumulation / Accumulation: Bioconcentration potential is low (BCF less than 100).
Mobility in Environment: Potential for mobility in soil is high.

Section 13: Disposal Considerations

Waste Classification: The dispensed liquid product is a RCRA hazardous waste for toxicity with the following potential waste codes: F001, F002, D039, D040. (See 40 CFR Part 261.20 – 261.33)
Empty aerosol containers may be recycled. Any liquid product should be managed as a hazardous waste.

All disposal activities must comply with federal, state, provincial and local regulations. Local regulations may be more stringent than state, provincial or national requirements.

Section 14: Transport Information

US DOT (ground): UN1950, Aerosols, nonflammable, 2.2 (6.1), Limited Quantity**

ICAO/IATA (air): UN1950, Aerosols, nonflammable, containing substances in Division 6.1, Packing Group III, 2.2 (6.1), Limited Quantity

IMO/IMDG (water): UN1950, Aerosols, 2.2 (6.1)

Special Provisions: Marine Pollutant
**This product can be classified and labeled as 'Consumer Commodity, ORM-D' for domestic ground shipping until January 1, 2014.
If shipping as limited quantity by ground, note that shipping papers are not required.

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Section 15: Regulatory Information

U.S. Federal Regulations:

Toxic Substances Control Act (TSCA):

All ingredients are either listed on the TSCA inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

Reportable Quantities (RQ's) exist for the following ingredients: tetrachloroethylene (100 lbs)
trichloroethylene (100 lbs)
1,2-butylene oxide (100 lbs)

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Superfund Amendments Reauthorization Act (SARA) Title III:

Section 302 Extremely Hazardous Substances (EHS): None

Section 311/312 Hazard Categories:	Fire Hazard	No
	Reactive Hazard	No
	Release of Pressure	Yes
	Acute Health Hazard	Yes
	Chronic Health Hazard	Yes

Section 313 Toxic Chemicals: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:
trichloroethylene (< 44%), tetrachloroethylene (< 54%), 1,2-butylene oxide (0.2%)

Clean Air Act:

Section 112 Hazardous Air Pollutants (HAPs): trichloroethylene, tetrachloroethylene, 1,2-butylene oxide

U.S. State Regulations:

California Safe Drinking Water and Toxic Enforcement Act (Prop 65):

This product may contain the following chemicals known to the state of California to cause cancer, birth defects or other reproductive harm: trichloroethylene, tetrachloroethylene

Consumer Products VOC Regulations: In states with Consumer Product VOC Regulations, this product is not for retail sale.
This product is for use in the manufacturing process only.

State Right to Know:

New Jersey:	79-01-6, 127-18-4, 124-38-9, 106-88-7
Pennsylvania:	79-01-6, 127-18-4, 124-38-9, 106-88-7
Massachusetts:	79-01-6, 127-18-4, 124-38-9, 106-88-7
Rhode Island :	79-01-6, 127-18-4, 124-38-9, 106-88-7

Canadian Regulations:

Controlled Products Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Hazard Class: A, D1B, D2A, D2B

Canadian DSL Inventory: All ingredients are either listed on the DSL Inventory or are exempt.

European Union Regulations:

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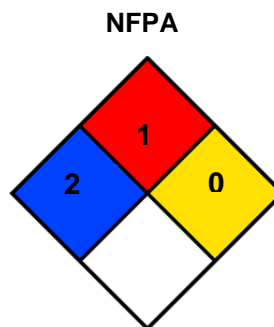
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RoHS Compliance: This product is compliant with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003. This product does not contain any of the restricted substances as listed in Article 4(1) of the RoHS Directive.

Additional Regulatory Information: None

Section 16: Other Information

HMIS® (II)	
Health:	2
Flammability:	1
Reactivity:	0
PPE:	B



Ratings range from 0 (no hazard) to 4 (severe hazard)

Prepared By: Michelle Rudnick
CRC #: 782
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Changes since last revision: Section 15: Prop 65
Consumer Products VOC Regulations

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this MSDS consult your supervisor, a health & safety professional, or CRC Industries.

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Service
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL: Domestic Substance List
g/L: grams per Liter
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organization
lbs./gal: pounds per gallon
LC: Lethal Concentration
LD: Lethal Dose

NA: Not Applicable
ND: Not Determined
NIOSH: National Institute of Occupational Safety & Health
NFPA: National Fire Protection Association
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PMCC: Pensky-Martens Closed Cup
PPE: Personal Protection Equipment
ppm: Parts per Million
RoHS: Restriction of Hazardous Substances
STEL: Short Term Exposure Limit
TCC: Tag Closed Cup
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Information System