



Safety Data Sheet

Formula No: 2250
Revision Date: 2017/10/24
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Mirachem 250 Rust & Scale Remover

1. IDENTIFICATION OF SUBSTANCE / PREPARATION AND OF THE COMPANY

Product name: Mirachem 250 Rust & Scale Remover
Identified uses: Concentrated industrial acid cleaner for use in removing rust and scale.
Use restrictions: Use only for the purposes indicated on the label.

Company: Mirachem, LLC
P.O. Box 14059
Phoenix, Arizona 85063-4059
USA

Email address: SDS@mirachem.com
Customer service: USA (English) Telephone: 1 (800) 847-3527

Emergency phone number(s): USA (English, Business Hours) Telephone: 1 (800) 847-3527
Chemtrec (US, 24 hours) Telephone: 1 (800) 424-9300

2. HAZARD(S) IDENTIFICATION

GHS Classification ACUTE AQUATIC HAZARD: Category 3

GHS Label Elements

Pictogram: None required.
Signal word: None required
Hazard statements: Harmful to aquatic life. (H402)

Precautionary Statements

Prevention: Avoid release to the environment. (P273)
Response: None required.
Storage: None required.
Disposal: Dispose of in accordance with local, state and federal regulations. (P501) See SECTION 13 – DISPOSAL CONSIDERATIONS, for additional waste disposal information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical characterization: Mixture (water based)

Ingredient:	CAS Number	Percent
Phosphoric Acid	7664-38-2	10

4. FIRST AID MEASURES

Protection of First-Aiders:	First aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION, for specific personal protective equipment.
Inhalation:	No adverse effects are anticipated. Remove to fresh air. If breathing is difficult, get medical assistance.
Eye contact:	May cause mild temporary irritation. If eye irritation develops, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation persists.
Ingestion:	No adverse health effects are anticipated. If swallowed, treat symptomatically and supportively. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. If adverse health effects develop, persist or are severe, seek medical attention if you feel unwell. Never give anything by mouth to an unconscious person.
Skin contact:	No adverse effects expected. Prolonged or repeated exposure may cause mild irritation or drying of skin. If on skin, wash with plenty of water. If irritation develops or persists, get medical attention.
Symptoms and effects, both acute and delayed:	Aside from the information provided above and below, no additional symptoms and effects are anticipated.
Notes to physician:	No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate pre-existing dermatitis.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Do not use direct water stream. May spread fire.
Unusual fire and explosion hazards:	In a fire or if heated, a pressure increase may occur and the container may burst.
Hazardous thermal decomposition products:	Decomposition products may include the following materials; carbon dioxide, carbon monoxide, nitrogen oxides.
Special precautions for fire fighters:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving personal risk or without suitable training.
Special protective equipment for fire fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Isolate area. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION. Refer to SECTION 7 – HANDLING AND STORAGE, for additional precautionary measures.
Environmental precautions:	Prevent from entering into soil, ditches, storm sewers, waterways and/or ground water. See SECTION 12 – ECOLOGICAL INFORMATION for additional information.
Methods for cleaning up:	Contain spilled material; keep from entering soil, surface waters or sewers. <i>Small Spills:</i> Clean up with absorbent and collect absorbent for disposal in accordance with Federal, State or local disposal requirements. <i>Large Spills:</i> Dike or otherwise contain spilled material to insure runoff does not reach a waterway. Collect and drum off material for disposal in accordance with Federal, State or local disposal requirements. Notify local, state or federal authorities if required. Rinse with water. Material may be neutralized for safer handling with sodium carbonate (soda ash). See SECTION 13 – DISPOSAL CONSIDERATIONS and SECTION 15 – REGULATORY REQUIREMENTS for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling:	Avoid contact with eyes. Keep container closed. Promptly clean up spills. See SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION for additional information.
Conditions for safe storage, including incompatibilities:	Keep containers tightly closed. Protect from freezing; may rupture or degrade product. Store between 40°F (4°C) and 110°F (43°C). Keep out of reach of children. The shelf life for unopened containers stored under the above conditions is 60 months from the date on the package.
Recommended packaging materials:	Use original container or clean plastic (polyethylene) containers. Do not store in steel containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:	Phosphoric Acid	ACGIH TLV	1 mg/m ³
Engineering controls:	Good ventilation should be sufficient to control worker exposure to airborne contaminants. Provide additional ventilation as necessary to keep airborne concentrations of vapors/mists below threshold limit values. Provide eye wash station within close proximity to product usage.		
Eye/Face protection:	Wear safety glasses with side shields and/or chemical goggles where conditions may cause eye exposure.		
Skin protection:	Under intended handling conditions, no protective clothing should be needed. Use protective clothing as required for the situation. Where diluted product is heated to >140°F, wear thermal protective gloves.		
Hand protection:	Under intended handling conditions, no protective gloves are required. Use protective gloves as required for the situation. Nitrile, vinyl or latex gloves of 4 mil thickness or greater are recommended. Where diluted product is heated to >140°F, wear thermal protective gloves.		
Respiratory protection:	Under intended handling conditions, no respiratory protection is needed.		
Personal hygiene:	Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.		

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Amber to dark brown liquid.	Vapor pressure @ 20°C @ 37°C	< 0.005 mm Hg* Not established
Odor:	Essentially none	Vapor density (air = 1)	1.0
Odor threshold:	Not available	Relative density:	Not established
pH:	1.0 – 2.0	Solubility in water:	Complete
pH at use dilution (25%):	1.0 – 2.0	Partition coefficient:	Not established
Melting point:	Not applicable to liquids	Auto-ignition temperature:	Not established
Freezing point:	26°F (-3 °C)	Decomposition temperature:	Not established
Initial boiling point:	212°F (100°C)	Viscosity @ 20°C:	< 100 cSt
Evaporation rate:	Not established	Liquid density @ 20°C:	1.105 g/cm ³
Flash point:	Will not burn	VOC Content:	0 g/l (0.0 lb./gal)
Flammability:	Not classified		
Flammable limits in air:	Not established		

* Absolute (calculated)

10. STABILITY AND REACTIVITY

Chemical stability & reactivity:	The product is stable.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid:	High strength alkaline materials will neutralize product.
Incompatible materials:	Avoid contact strong bases or strong oxidizers.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition may produce CO ₂

11. TOXICOLOGICAL INFORMATION

The GHS health hazard classifications have been calculated adhering to GHS guidelines for mixtures. The Acute Toxicity Estimates for this mixture (ATE_{mix}) are representative of these calculations.

Likely routes of exposure: Inhalation _____ Skin contact X Eye contact X Ingestion _____

Acute Toxicity:

Oral:	Not classified	LD ₅₀ (Rat)	> 6000 mg/kg
Dermal:	Not classified	LD ₅₀ ATE _{mix}	> 2,500 mg/kg
Inhalation:	Not classified	LD ₅₀ (Rat)	> 133 mg/l
Other routes:	Not applicable.		

Skin corrosion/irritation:	D.O.T. Corrosivity, Skin irritation on rabbits, 49 CFR 173.240 Irritation Index = 0.0 Skin Irritation Test (OECD TG 431):	Non-irritating to skin Non-irritant
Serious eye damage/irritation:	Eye Irritation (Rats, 16 CFR 1500.42) Cornea and Iris cleared at 48 hours, all irritation cleared within 7 days. Non-irritating to eyes. Bovine Corneal Opacity and Permeability Assay (BCOP):	Mild irritant
Skin sensitization:	No relevant data available.	
Respiratory sensitizer:	No relevant data available.	

Chronic Toxicity:

Mutagenicity:	No component of this mixture is known to be a mutagen or genotoxin.	
Carcinogenicity:	No component of this mixture is listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.	
Teratogenicity:	No component in this mixture is known to be a teratogen.	
Developmental / fertility effects:	No known effects or critical hazards	

Specific Target Organ Toxicity (STOT)	Single dose:	No relevant data available.
Aspiration hazard:	Repeat exposure:	No relevant data available
		No relevant data available.

12. ECOLOGICAL INFORMATION

The GHS environmental hazard classifications have been calculated adhering to GHS guidelines for mixtures. The Acute Aquatic Toxicity Estimates for this mixture (ATE_{mix}) are representative of these calculations.

Aquatic Toxicity:

Acute Aquatic Toxicity	Fish	Category 3	$EC_{50} ATE_{mix}$	> 10 but < 100 mg/l
	Crustacea	Not classified	$EC_{50} ATE_{mix}$	> 100 mg/l
	Algae	Category 3	$EC_{50} ATE_{mix}$	> 10 but < 100 mg/l
Chronic Aquatic Toxicity	No relevant data available.			
Persistence and degradability:	The individual components of this mixture are readily biodegradable.			
Bioaccumulative potential:	No relevant data available.			
Mobility in soil:	No relevant data available.			

13. DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized wherever possible. Empty containers may retain some product residues. Rinse container before disposal. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff with soil and waterways.

This product does not meet RCRA's characteristic definition for ignitability, or reactivity, and none of the materials used in this product are listed in 40 CFR 261.33. The pH of this product is equal to or less than 2.0 and is therefore characterized under RCRA as a corrosive. Neutralization with lime or soda ash prior to disposal may be required.

Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, State and local waste disposal requirements may be more restrictive or otherwise different from Federal laws and regulations.

14. TRANSPORT INFORMATION

UN Number:	N/A	Transportation Hazard Class:	N/A
UN Proper Shipping Name:	N/A	UN Packing Group:	None
ADR (EU Carriage):	Not regulated	RID (Rail)	Not regulated
AND/ADNR (Inland water):	Not regulated	ICAO/IATA (Air)	Not regulated
IMO/IMDG (Marine):	Not regulated		
DOT Shipping Name:	Non-regulated	DOT Hazard Classification:	N/A
NMFC Freight Class:	Cleaning Compound NOI, 48580, Sub 3, Class 55		
HS Tariff Classification (Schedule B)	3402.90.5030		
Special Precautions:	No known special precautions.		

15. REGULATORY INFORMATION

US Federal Regulations

SARA Title III

Section 302 – Extremely Hazardous Substance

This product does not contain chemicals at levels which require reporting under this statute.

Section 302.4 & 304: CERCLA: Hazardous Substances

Releases of this product to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

Sections 311 & 312

Immediate (acute) Health Hazard	No
Delayed (chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure	No

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Phosphoric acid (planning threshold of 10,000 pounds)
Immediate and acute health hazard

Section 313

This product contains phosphoric acid (CAS No. 7664-38-2) at a 10% level.

TSCA

All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

US State Regulations

Arizona	Maricopa County Rule 331	This product is considered a Low-VOC cleaner.
California	California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)	This product does not contain any materials currently listed by California as chemicals known to cause cancer or known to have reproductive toxicity under Proposition 65.
	BAAQMD	This product meets the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 16.
	SCAQMD	This product meets the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1171 for Solvent Cleaning.
Georgia	Rule 391-3-02	This product is greater than 80% water which qualifies this as an "Aqueous Cleaning Solvent". As an "Aqueous Cleaning Solvent" this product is exempt from Rule 391-3-02.
Michigan	Rule R 336.1281 & R 336.1212	The absolute (composite) vapor pressure of this product in either concentrated or diluted form is less than 0.1 mm Hg under standard conditions. Part (e) under R 336.1281 exempts this product from the requirement for a "Permit to Install". The vapor pressure for this product exempts it from the recordkeeping requirements of R366.1212 as indicated in Part (3)(b) and clarified by MDEQ interoffice communication of July 5, 2011.
Pennsylvania	Hazardous Substances List	This product contains the following chemicals which require reporting under this statute; Phosphoric acid (CAS No. 7664-38-2)
Texas	Texas Rule 106.454 – Degreasing Units	Under this rule, this product is classified as a zero VOC product. The true vapor pressure is calculated to be < 0.6 pounds per square inch, absolute (psia) at an operating temperature of 100°F. This product meets the requirements of section (2)(C) for a remote reservoir cleaner and as such Section (1)(A) (i) and (ii) do not apply. Completion of Form PI-7 and monthly record keeping is not required.

International Regulatory Information

Notice: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warrantee, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with their Federal, State/Province, and local laws. The following specific information is made for the purpose of complying with numerous specific foreign regulations.

Country Substance (Chemical) Inventories

Canada	DSL	The individual components of this mixture are listed.
United States	TSCA	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

16. OTHER INFORMATION

HMIS Rating:

Health	1
Flammability	0
Physical Hazards	0

Protective Equipment

NFPA Rating:

Health	1
Flammability	0
Reactivity	0

Special

All information and instructions provided in this Safety Data Sheet (SDS) are based on the current state of scientific and technical knowledge at the date indicated on the present SDS. Mirachem shall not be held responsible for any defect in the product covered by this SDS, should the existence of such defect not be detectable considering the current status of scientific and technical knowledge.

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