



MATERIAL SAFETY DATA SHEET

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1. COMPANY AND PRODUCT IDENTIFICATION

Product name: QUAKERAL® 381 SD
Product code: 014649-02

Supplier:
Quaker Chemical Corporation
Quaker Park One
901 Hector Street
Conshohocken, PA 19428
610-832-4000
E-mail: she@quakerchem.com

Emergency telephone number:
* 24 HOUR TRANSPORTATION:
**CHEMTREC: 1-800-424-9300
703-527-3887 (Call collect outside of US)
* 24 HOUR EMERGENCY HEALTH & SAFETY:
**QUAKER CHEMICAL CORPORATION: (800) 523-7010(
Within US only)
Outside of US call (703) 527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

Components	CAS No.	Weight %	OSHA Ceiling Limits	OSHA TWA (final):	ACGIH Ceiling Limits	ACGIH Exposure Limits:	Vendor Exposure Limits:
Mineral Oil*	8012-95-1	40-50		5mg/m ³		5 mg/m ³	None
Isopropanolamine	78-96-6	2-8		None		None	3 ppm
Ethoxylated alkyl amine	Proprietary	2-7		None		None	
Alcohols, C16-18 and C18-unsatd., ethoxylated	68920-66-1	1-5		NA		None	
Triethanolamine	102-71-6	1-5		None		5 mg/m ³	
Substituted Amine	Proprietary	1-5		None		None	

* May include one or more of the following CAS #: 64741-88-4, 64741-89-5, 64741-44-2, 64741-96-4, 64741-97-5, 64742-46-7, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-62-7, 64742-65-0, 72623-84-8, 72623-85-9, 72623-86-0, 72623-87-1, 69029-75-0 and 64741-95-3

3. HAZARDS IDENTIFICATION

Emergency Overview

Irritating to eyes.
May cause skin irritation and/or dermatitis.
May cause irritation of respiratory tract.
May be harmful if swallowed.

Signal word: WARNING

Principle routes of exposure: Eyes, skin and inhalation.

Eye contact: Irritating to eyes. Contact with a component of this product may cause eye damage..

Skin contact: Moderately irritating to the skin. Repeated or prolonged contact with base product may cause irritation leading to various skin disorders such as dermatitis, oil acne, or folliculitis. Component of the product may be harmful if absorbed into the body through the skin.

Inhalation: May cause irritation of the mucous membranes. Inhalation of vapor (generated at high temperatures only) or oil mist from this product may cause mild irritation of the upper respiratory tract.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Physico-chemical properties: No hazards resulting from material as supplied.

4. FIRST AID MEASURES

General advice: Take off contaminated clothing and shoes immediately.
Wash off with soap and water.
If symptoms persist, call a physician.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult a physician

Skin contact: Wash off immediately with soap and plenty of water. If a person feels unwell or symptoms of skin irritation appear, consult a physician..

Ingestion: If swallowed, seek medical advice immediately and show this container or label. Never give anything by mouth to an unconscious person.

Inhalation: Move to fresh air in case of accidental inhalation of vapors. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

Note to physician: Treat symptomatically.

Medical condition aggravated by exposure: Dermatitis and asthma.

5. FIRE-FIGHTING MEASURES

Flash Point (°C): NA **Flash point (°F):** NA **Flash Point Method:** None to boiling.

Flammable limits in air - lower (%): Not determined **Flammable limits in air - upper (%):** Not determined

Suitable extinguishing media: Use dry chemical, CO2, water spray or 'alcohol' foam.

Unusual hazards: None known

Special protective equipment for fire-fighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific methods: Water mist may be used to cool closed containers.

6. ACCIDENTAL RELEASE MEASURES

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- Personal precautions:** Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapour/dust.
- Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.
- Methods for cleaning up:** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Handling

- Technical measures/precautions:** Provide sufficient air exchange and/or exhaust in work rooms.
- Safe handling advice:** In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe vapors or spray mist. Wear personal protective equipment. Avoid contact with skin and eyes. Wash thoroughly after handling.

Storage

- Technical measures/storage conditions:** Store at room temperature in the original container.
- Incompatible products:** strong oxidizing agents
- Safe storage temperature:** 40-100 ° F
- Shelf life:** 3 months

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components	ACGIH Ceiling Limits	ACGIH Exposure Limits:	OSHA Ceiling Limits	OSHA TWA (final):	NIOSH - Pocket Guide - TWAs:	Vendor Exposure Limits:
Mineral Oil*		5 mg/m ³		5mg/m ³	5mg/m ³	None
Isopropanolamine		None		None	None	3 ppm
Ethoxylated alkyl amine		None		None	None	None
Alcohols, C16-18 and C18-unsatd., ethoxylated		None		NA	None	None
Triethanolamine		5 mg/m ³		None	None	None
Substituted Amine		None		None	None	None

- Engineering measures:** Ensure adequate ventilation.

Personal Protective Equipment

- General:** Eye Wash and Safety Shower
- Respiratory protection:** If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, a NIOSH/MSHA certified respirator with organic vapor/P100 filter should be worn.

Hand protection: Neoprene gloves
Skin and body protection: Long sleeved clothing
Eye protection: Tightly fitting safety goggles.
Hygiene measures: Avoid contact with skin, eyes and clothing.



9. PHYSICAL AND CHEMICAL PROPERTIES:

Physical state: Liquid
Color: Clear Amber
Odour: Amine-like
Boiling point/range (°C): >100
Boiling point/range (°F): >212
Vapour density: Not determined
Vapour pressure: Not determined
Solubility: Emulsifiable
Evaporation rate: Not determined
pH: 10.45
Flash Point (°C): NA
Flash point (°F): NA
Decomposition temperature: Not determined
Auto-ignition temperature (°C): Not determined
Density @ 15.5 ° C (g/cc) : 0.938
Bulk density @ 60 ° F (lb/gal): 7.83
Partition coefficient (n-octanol/water, log Pow): Not determined
Explosive properties:
- upper limit: No data available
- lower limit: No data available

10. STABILITY AND REACTIVITY

Stability:
Stable under recommended storage conditions.

Conditions to avoid:
None known

Materials to avoid:
Strong acids and oxidising agents

Hazardous decomposition products:
Carbon oxides, Nitrogen oxides (nox)

Polymerisation
Not applicable

11. TOXICOLOGICAL INFORMATION

II. TOXICOLOGICAL INFORMATION

WARNING! Do not add nitrites to this metalworking fluid under penalty of federal law. Addition of nitrites leads to formation of a substance known to cause cancer. This product is designed to be used without nitrites.

.. This product contains triethanolamine. Liver and kidney damage has been demonstrated in animals from chronic exposure to triethanolamine. These effects were generally seen in feeding or drinking water studies; however, there was at least one positive finding in studies with dermal absorption. The relevance of animal test data to humans is unknown at this time.

MINERAL OIL INFORMATION: Any product containing a substance for which OSHA has established a permissible exposure limit (PEL) is considered hazardous. OSHA has established a PEL of 5 mg/m³ for worker exposure to air borne mists of mineral oils. Therefore, the presence of mineral oils brings this product within the provisions of the OSHA Hazard Communication Standard where the PEL reaches or exceeds 5 mg/m³. Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

... No toxicological information is available on the product. Data obtained on components are summarized below.

11. TOXICOLOGICAL INFORMATION

Components	NTP:	IARC:	OSHA - Select Carcinogens	NIOSH - Selected LD50s and LC50s
Mineral Oil*	This product does not contain any material shown to be a carcinogen by the National Toxicology Program (NTP).	This product does not contain any material shown to be a carcinogen by the International Agency for Research on Cancer (IARC).	This product does not contain any material shown to be a carcinogen by OSHA.	22g/kgOral LD50Mouse
Isopropanolamine	This product does not contain any material shown to be a carcinogen by the National Toxicology Program (NTP).	This product does not contain any material shown to be a carcinogen by the International Agency for Research on Cancer (IARC).	This product does not contain any material shown to be a carcinogen by OSHA.	1715mg/kgOral LD50Rat
Ethoxylated alkyl amine	This product does not contain any material shown to be a carcinogen by the National Toxicology Program (NTP).	This product does not contain any material shown to be a carcinogen by the International Agency for Research on Cancer (IARC).	This product does not contain any material shown to be a carcinogen by OSHA.	
Alcohols, C16-18 and C18-unsatd., ethoxylated	This product does not contain any material shown to be a carcinogen by the National Toxicology Program (NTP).	This product does not contain any material shown to be a carcinogen by the International Agency for Research on Cancer (IARC).	This product does not contain any material shown to be a carcinogen by OSHA.	
Triethanolamine	This product does not contain any material shown to be a carcinogen by the National Toxicology Program (NTP).	This product does not contain any material shown to be a carcinogen by the International Agency for Research on Cancer (IARC).	This product does not contain any material shown to be a carcinogen by OSHA.	4190mg/kgOral LD50Rat 16mL/kgDermal LD50Rat 2000mg/kgDermal LD50Rabbit
Substituted Amine	This product does not contain any material shown to be a carcinogen by the National Toxicology Program (NTP).	This product does not contain any material shown to be a carcinogen by the International Agency for Research on Cancer (IARC).	This product does not contain any material shown to be a carcinogen by OSHA.	373mg/kgOral LD50Rat 500mg/kgOral LD50Mouse 200-316mg/kgDermal LD50Rabbit

12. ECOLOGICAL INFORMATION

Persistence and degradability: No information available

Mobility: No data available

Bioaccumulation: No data available

Ecotoxicity effects: No data available

Aquatic toxicity: Not Determined

Isopropanolamine

Ecotoxicity - Fish Species Data: h (Pimephales promelas - 2390-2650mg/L) LC50 96

Triethanolamine

Ecotoxicity - Fish Species Data: h (Pimephales promelas - 10600-13000mg/L) LC50 96
h (Pimephales promelas - >1000mg/L) LC50 96
h (Lepomis macrochirus - 450-1000mg/L) LC50 96
h (Pimephales promelas - 10600-13000mg/L) LC50 96

Substituted Amine

Ecotoxicity - Fish Species Data: LC50 (Brachydanio rerio - 96h) = 62 mg/L
LC50 (Oryzias latipes - 96h) = 12 mg/L - OECD 203; ISO 7346; 92/69/EEC, C.1 - BASF

13. DISPOSAL CONSIDERATIONS

Waste from residues/unused products: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

Contaminated packaging: Do not re-use empty containers

Methods for cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.

14. TRANSPORT INFORMATION

U. S. DEPARTMENT OF TRANSPORTATION:

Proper shipping name: Not Regulated

TDG (CANADA):

Proper shipping name: Not Regulated

IMDG/IMO:

Proper shipping name: Not Regulated

IATA/ICAO:

Proper shipping name: Not Regulated

15. REGULATORY INFORMATION

CLASSIFICATION AND LABELING

OSHA Hazard Communication Standard: This product is considered to be hazardous under the OSHA Hazard Communication Standard.

Canada - WHMIS Classification Information: This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Canadian Product Classification: Class D2B

Product Classification Graphic(s):



**Component Classification
Data:**

Mineral Oil* - 8012-95-1

WHMIS hazard class: 1 %
Uncontrolled product according to WHMIS classification criteria.

Triethanolamine - 102-71-6

WHMIS hazard class:
Uncontrolled product according to WHMIS classification criteria

Substituted Amine -

WHMIS hazard class: E

**Canadian National Pollution
Inventory Data:**

Triethanolamine - 102-71-6

**Canada - National Pollution Listed
Release Inventory**

Substituted Amine -

**Canada - National Pollution Listed
Release Inventory**

U.S. REGULATIONS:

SARA (311, 312) hazard class: This product possesses the following SARA Hazard Categories:

Immediate Health (Acute): Yes
Delayed Health (Chronic): Yes
Flammability: No
Pressure: No
Reactivity: No

RCRA Status

Not Regulated

STATE REGULATIONS (RTK):

California Proposition 65 Status:

May contain trace amounts of listed chemicals: 1,4-dioxane,
ethylene oxide and acetaldehyde

INVENTORY STATUS:

United States TSCA - Sect. 8(b) Inventory:	This product complies with TSCA
Canada DSL Inventory List -	Compliance has not been determined
EC EINECS/ELINCS/NLP list:	Compliance has not been determined
Inventory - Japan - Existing and New Chemical Substances (ENCS):	Compliance has not been determined.

16. OTHER INFORMATION

Sources of key data used to compile the data sheet: Material safety data sheets of the ingredients.

Prepared by: Quaker Chemical Corporation -Safety, Health and Environmental Affairs Group - US

Reason for revision: This data sheet contains changes from the previous version in section(s) 2 and 15

<u>HMIS classification:</u>	<u>HMIS Use Dilution</u>	<u>NFPA rating:</u>
Health: 2	Health --	Health: 2
Flammability: 0	Flammability --	Flammability: 0
Reactivity: 0	Reactivity --	Reactivity: 0
Personal Protection: X	Personal Protection --	Special: NA

* Indicates possible chronic health effect

Personal protection recommendations should be reviewed by purchasers. Workplace conditions are important factors in specifying adequate protection.

Disclaimer

This product's safety information is provided to assist our customers in assessing compliance with safety/health/environmental regulations. The information contained herein is based on data available to us and is believed to be accurate. However, no warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of this data, the results to be obtained from the use thereof, or the hazards connected with the use of the product. Since the use of this product is within the exclusive control of the user, it is the user's obligation to determine the conditions for safe use of the product. Such conditions should comply with all regulations concerning the product. Quaker Chemical Corporation ("Quaker") assumes no liability for any injury or damage, direct or consequential, resulting from the use of this product unless such injury or damage is attributable to the gross negligence of Quaker.

End of Safety Data Sheet