

## SAFETY DATA SHEET

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### 1. COMPANY AND PRODUCT IDENTIFICATION

**Product name:** BRO 2000 SYN AB  
**Product code:** 020162-02

**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	50 - 60%		5mg/m <sup>3</sup>		5 mg/m <sup>3</sup>	None
Diethanolamine	111-42-2	<1%				1 mg/m <sup>3</sup> (TWA)	

\* 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, 64742-01-4, and 64741-95-3

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

This product may cause irritation of the eyes, skin, mucous membranes and respiratory tract.  
May be harmful if swallowed.

**Signal word:** CAUTION

**Principle routes of exposure:** Eyes, skin and inhalation.

<b>Eye contact:</b>	Contact with eyes may cause irritation.
<b>Skin contact:</b>	Repeated or prolonged contact with base product may cause irritation leading to various skin disorders such as dermatitis, oil acne, or folliculitis.
<b>Inhalation:</b>	Inhalation of vapor (generated at high temperatures only) or oil mist from this product may cause mild irritation of the upper respiratory tract.
<b>Ingestion:</b>	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
<b>Physico-chemical properties:</b>	No hazards resulting from material as supplied.

## 4. FIRST AID MEASURES

<b>General advice:</b>	Show this safety data sheet to the doctor in attendance. Remove contaminated clothing and shoes. Wash contaminated clothing before re-use. Wash off with soap and water. If symptoms persist, call a physician.
<b>Eye contact:</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
<b>Skin contact:</b>	Remove contaminated clothing and shoes. Wash contaminated clothing before re-use. Rinse immediately with plenty of water for at least 15 minutes
<b>Ingestion:</b>	If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
<b>Inhalation:</b>	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.
<b>Note to physician:</b>	Treat symptomatically.
<b>Medical condition aggravated by exposure:</b>	Dermatitis and asthma.

## 5. FIRE-FIGHTING MEASURES

<b>Flash Point (°C):</b> 177	<b>Flash Point (°F):</b> 350	<b>Flash Point Method:</b> COC
<b>Flammable limits in air - lower (%):</b> Not determined	<b>Flammable limits in air - upper (%):</b> Not determined	
<b>Suitable extinguishing media:</b>	Use dry chemical, CO2, water spray or `alcohol` foam.	
<b>Specific hazards:</b>	Do not allow material to contaminate ground water system.	
<b>Unusual hazards:</b>	None known	
<b>Special protective equipment for fire-fighters:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.	
<b>Specific methods:</b>	Water mist may be used to cool closed containers.	

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Do not breathe vapour/dust. Use personal protective equipment. Wash thoroughly after handling
<b>Environmental precautions:</b>	Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up:</b>	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

<b>Technical measures/precautions:</b>	Use only in area provided with appropriate exhaust ventilation..
<b>Safe handling advice:</b>	In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Wear personal protective equipment. Wash thoroughly after handling.

### Storage

<b>Technical measures/storage conditions:</b>	Store at room temperature in the original container
<b>Incompatible products:</b>	Strong oxidizing agents
<b>Safe storage temperature:</b>	40 - 100 ° F
<b>Shelf life:</b>	12 months

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components	OSHA Ceiling Limits	OSHA TWA (final)	ACGIH Ceiling Limits	ACGIH Exposure Limits	NIOSH - Pocket Guide	Vendor Exposure Limits
Mineral Oil*	None	5mg/m <sup>3</sup>	None	5 mg/m <sup>3</sup>	5mg/m <sup>3</sup>	None
Diethanolamine	None	None	None	1 mg/m <sup>3</sup> (TWA)	3 ppm (TWA) 15 mg/m <sup>3</sup> (TWA)	None

<b>Engineering measures:</b>	Ensure adequate ventilation.
<b>Personal Protective Equipment:</b>	
<b>General:</b>	Eye Wash and Safety Shower
<b>Respiratory protection:</b>	If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, a NIOSH-certified respirator with organic vapor/P100 filter should be worn.

**Eye protection:** Safety glasses with side-shields.  
**Hand protection:** Neoprene gloves  
**Skin and body protection:** Long sleeved clothing  
**Hygiene measures:** Avoid contact with skin, eyes and clothing.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid  
**Color:** Clear Dark yellow  
**Odor:** Mild  
**Vapour density:** Not determined  
**Vapor pressure (kPa):** Not determined  
**Solubility in water:** Emulsifiable  
**Evaporation rate:** Not determined  
**pH:** 7.4 - 8.5 @8%  
**Flash Point (°C):** 177  
**Flash Point (°F):** 350  
**Decomposition temperature (°C):** Not determined  
**Auto-ignition temperature (°C):** Not determined  
**Density @ 15.5 °C (g/cc):** 0.934  
**Bulk density @ 60 ° F (lb/gal):** 7.79  
**Partition coefficient (n-octanol/water):** Not determined  
**Explosive Limits:**  
- 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 oxidizing agents

**Hazardous decomposition products:**

Carbon oxides, Nitrogen oxides (nox).

**Hazardous Polymerization:**

Not applicable

## 11. TOXICOLOGICAL INFORMATION

**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/m<sup>3</sup> 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/m<sup>3</sup>. 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.

Animal studies indicate that repeated overexposure to diethanolamine (DEA) may cause damage to a number of organ systems, including blood, kidneys, liver, central nervous system and the male reproductive system. Studies of DEA show evidence of toxicity to the fetus of animals when administered by dermal, oral and inhalation routes. These effects were observed at very high doses that coincided with significant maternal toxicity. No signs or symptoms of chronic exposure to DEA have been reported in humans. The diluted concentration of DEA in this product is expected to mitigate the potential for chronic effects.

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

Components	IARC Carcinogens	NTP:	OSHA - Select Carcinogens	Acute Toxicity
Mineral Oil*	Not listed as carcinogenic or possibly carcinogenic to humans	Not listed as known or reasonably anticipated to be a human carcinogen	Not listed as a select carcinogen	Mouse Oral LD50 = 22 g/kg
Diethanolamine	Group 2B (Possibly Carcinogenic to Humans)	Not listed as known or reasonably anticipated to be a human carcinogen	Present	Rat Oral LD50 = 620 µL/kg Rabbit Dermal LD50 = 7640 µL/kg

## 12. ECOLOGICAL INFORMATION

**Persistence and degradability:** No information available

**Mobility:** No data available

**Bioaccumulation:** Not available

**Ecotoxicity effects:** No data available

**Aquatic toxicity:** Not Determined

### Component Information

Components	Ecotoxicity - Fish Species Data:	Ecotoxicity - Freshwater Algae Data:	Ecotoxicity - Water Flea Data:
Mineral Oil*	No data	No data	No data
Diethanolamine	LC50 (Fish - 96h) = 540 - 5000 mg/l	IC50 ( Selenasatrum capricornutum - 72h) = 303 - 306 mg/l	EC50 (Daphnia magna - 48h) = 133 mg/l

## 13. DISPOSAL CONSIDERATIONS

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**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

#### CANADIAN REGULATIONS:

**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:** None Required

**Product Classification Graphic(s):**

#### Component Classification Data:

Components	WHMIS hazard class	CEPA Schedule I	Challenge Substances
Mineral Oil*	1% Uncontrolled product according to WHMIS classification criteria.	Not listed	Not listed
Diethanolamine	D2A D2B	Listed	Not listed

#### U.S. FEDERAL REGULATIONS:

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

**CERCLA/SARA Information:**

**SARA (311, 312) hazard class:** This product possesses the following SARA Hazard Categories:  
**Immediate Health (Acute):** Yes  
**Delayed Health (Chronic):** No  
**Flammability:** No  
**Pressure:** No  
**Reactivity:** No

Components	Hazardous Substances and RQs	Extremely Hazardous Substances and TPQs	SARA 313 Emission Reporting
Mineral Oil*	Not listed	Not listed	Not listed
Diethanolamine	100 lb	Not listed	1.0 %

**Clean Air and Clean Water Acts:**

Components	Hazardous Air Pollutants	CWA - Hazardous Substances	CWA - Toxic Pollutants	CWA - Priority Pollutants
Mineral Oil*	Not listed	Not listed	Not listed	Not listed
Diethanolamine	Listed	Not listed	Not listed	Not listed

**RCRA Status:** Not regulated

**U.S. STATE REGULATIONS (RTK):**

Components	California Proposition 65	PARTK	MI Critical Materials	NJRTK	MARTK
Mineral Oil*	Not Listed	Present	Not Listed	1437	Present
Diethanolamine	Listed	Environmental hazard	Not Listed	0686	Present

**California Proposition 65 Status:** May contain trace amounts of listed chemicals: 1,4-dioxane, ethylene oxide, formaldehyde, acetaldehyde.

**INVENTORY STATUS:**

**United States TSCA - Sect. 8(b) Inventory:** This product complies with TSCA

**Canada DSL/NDSL Inventory List** All components are either on the DSL or the NDSL

**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, 3, 4, and 15 .

<b>HMIS classification:</b>	<b>HMIS Use Dilution</b>	<b>NFPA rating:</b>
<b>Health:</b> 1	<b>Health</b> --	<b>Health:</b> 1
<b>Flammability:</b> 1	<b>Flammability</b> --	<b>Flammability:</b> 1
<b>Reactivity:</b> 0	<b>Reactivity</b> --	<b>Reactivity:</b> 0
<b>Personal Protection:</b> B	<b>Personal Protection</b> --	<b>Special:</b> 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