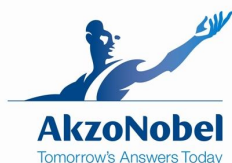


Material Safety Data Sheet



MSDS# 8002517-1

Section 1. Chemical Product and Company Identification

Product name	BEROL® 226 SA	
Material Uses	: Surfactant.	In Case of Emergency
Supplier/ Manufacturer	AKZO NOBEL SURFACE CHEMISTRY LLC 525 West Van Buren Chicago, IL 60607-3823 www.surfactants.akzonobel.com	CHEMTREC: 800-424-9300 CANUTEC: 613-996-6666 Medical/Handling: 914-693-6946 Product/Technical: 800-906-9977

Section 2. Hazards Identification

Physical State	Liquid.
Color	Colorless to light yellow.
Odor	Amine like.
Emergency Overview	<p>WARNING! CAUSES SEVERE EYE IRRITATION. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA. MAY BE HARMFUL IF SWALLOWED. HARMFUL TO AQUATIC ORGANISMS. MAY BE HARMFUL TO ENVIRONMENT IF RELEASED IN LARGE AMOUNTS.</p> <p>Avoid contact with eyes. Do not ingest. Wash thoroughly after handling. Avoid contact of spilled material and runoff with soil and surface waterways.</p>
Routes of Entry	Absorbed through skin. Eye contact.

See Toxicological Information (section 11)

Section 3. Composition/ Information on Ingredients

Name	CAS #	% by Weight
Ethoxylated alcohol.	proprietary	40-60
quaternary amine compound	proprietary	20-40
Diluent.	proprietary	5-10

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Cold water may be used. Get medical attention immediately.
Skin Contact	Wash with soap and water. Get medical attention if irritation develops. Cold water may be used.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Medical Conditions Aggravated by Overexposure:	Repeated or prolonged exposure is not known to aggravate medical condition.

Continued on Next Page

Section 5. Fire Fighting Measures

Flammability of the Product	May be combustible at high temperature.
Auto-ignition Temperature	150°C (302°F)
Flash Points	Closed cup: >93.3°C (199.9°F). (Pensky-Martens.)
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Protective Clothing (Fire)	
Special Remarks on Fire Hazards	Diluent.: Treat as an oil fire.

Section 6. Accidental Release Measures

Small Spill and Leak	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill and Leak	Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Handling	Avoid contact with eyes. Do not ingest. Wash thoroughly after handling. Avoid contact of spilled material and runoff with soil and surface waterways.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

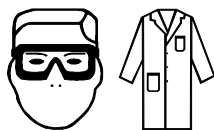
Section 8. Exposure Controls/ Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
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Personal Protection

Eyes	Splash goggles.
Body	Lab coat.
Respiratory	Wear appropriate respirator when ventilation is inadequate.
Hands	Not applicable.
Feet	Suitable protective footwear.

Protective Clothing (Pictograms)



Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
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Ingredient Name

Exposure Limits United States

Ethoxylated alcohol.
quaternary amine compound
Diluent.

Not available.

Not available.

ACGIH TLV (United States, 2006). Notes: Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.

TWA: 10 mg/m³ 8 hour(s). Form: Mist

OSHA PEL (United States, 1997).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

OSHA PEL 1989 (United States, 1989).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 10 mg/m³ 8 hour(s). Form: Total dust

Section 9. Physical and Chemical Properties

Physical State	Liquid.
Color	Colorless to light yellow.
Odor	Amine like.
pH	5 to 8 [Acidic.]
Boiling/Condensation Point	100°C (212°F)
Melting/Freezing Point	-10°C (14°F)
Pour Point	-10°C
Density	1.039 to 1.042 g/cm ³ (20°C / 68°F)
Vapor Density	The highest known value is 3.1 (Air = 1) (Diluent.).
Evaporation Rate	<1 (quaternary amine compound) compared to Butyl acetate.
Solubility	Soluble in cold water.
Dispersion Properties	See solubility in water.
Physical Chemical Comments	Surface Tension = 26.8 dynes/cm (0.1%)

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Incompatibility with Various Substances	Reactive with OXIDIZING AGENTS, acids. Slightly reactive to reactive with alkalis.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

Toxicity to Animals

Ingredient Name or Product name	Test	Result	Route	Species
quaternary amine compound	LD50	580 mg/kg	Oral	Rat
Diluent.	LD50	>3800 mg/kg	Oral	Rat
	LD50	4090 mg/kg	Oral	Mouse
	LD50	7750 mg/kg	Oral	Guinea pig
	LD50	>10000 mg/kg	Dermal	Rabbit

Special Remarks on Toxicity to Animals Diluent.: INHALATION LC50 >0.57 mg/l Rat

Chronic Effects on Humans

CARCINOGENIC EFFECTS: Classified None. by NIOSH [Diluent.].
MUTAGENIC EFFECTS: Non-mutagenic for bacteria and/or yeast. [BEROL® 226 SA (6908)].
Contains material which causes damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.

Special Remarks on Chronic Effects on Humans	based on data for: (similar material)
Acute Effects Skin	Slightly irritating to the skin.
Acute Effects Eyes	Severely irritating to the eyes.
Special Remarks on Other Toxic Effects on Humans	: Skin and Eyes based on data for: (similar material)

Section 12. Ecological Information

Ecotoxicity

Ingredient Name or Product name	Species	Period	Result
Ethoxylated alcohols	Fish (LC50)	96 hour(s)	1 to 10 mg/l
	Daphnia (EC50)	48 hour(s)	1 to 10 mg/l
	based on data for: (similar material) (EC50)	72 hour(s)	10 to 100 mg/l
Diluent. quaternary amine compound	Oncorhynchus mykiss (LC50)	96 hour(s)	54000 mg/l
	Trout (LC50)	96 hour(s)	24 mg/l
	Algae. (EC50)	96 hour(s)	3.9 mg/l

Biodegradability and Ecotoxicity Remarks

quaternary amine compound: 11% @ 28 day(s) CBT; 26% @ 112 day(s) CBT


Products of Degradation These products are carbon oxides (CO, CO₂) and water.

Section 13. Disposal Considerations



Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Consult your local or regional authorities.

Section 14. Transport Information

Regulatory Information	UN number	Proper shipping name	Class	Packing Group	Label	Additional information
DOT Classification	Not regulated.	-	-	-		Remarks 172.102 (c) Special Provision 146: This material may be shipped as a Class 9, because it has been designated as such by another Competent Authority. For transport by ground or rail in North America, this material is not regulated for transport.
TDG Classification	Not regulated.	-	-	-		-
IMDG Class	UN 3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Quaternary amine compound). Marine pollutant (Quaternary amine compound)	9	III		Marine pollutant Marine pollutant (P)

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IATA-DGR Class	UN 3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Quaternary amine compound)	9	III		-

Section 15. Regulatory Information

HCS Classification

Irritating material
Target organ effects

U.S. Federal Regulations

TSCA: All intentionally present components are listed on the TSCA inventory.

DSL: All intentionally present components are listed on the DSL.

TSCA 5(a)2 final significant rules: No products were found.

CERCLA: Hazardous substances.: No products were found.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: BEROL® 226 SA (6908): Immediate (Acute) Health Hazard

SARA 313 Form R Reporting Requirements
No products were found.

SARA 313 Supplier Notification
No products were found.

State Regulations

Pennsylvania RTK: Diluent.: (generic environmental hazard)
Massachusetts RTK: Diluent.

California prop. 65: No products were found.

WHMIS (Canada)

Class D-2B: Material causing other toxic effects (TOXIC).

CEPA DSL: Ethoxylated alcohol.; quaternary amine compound; Diluent.

European Union

Component

Ethoxylated alcohol.
quaternary amine compound
Diluent.

EC Number

proprietary
proprietary
proprietary

EC Status

proprietary
proprietary
proprietary

EC Annex

proprietary
proprietary
proprietary

Other International Lists

Australia (NICNAS): BEROL® 226 SA (6908)

China IECSC: BEROL® 226 SA (6908)

Japan (MITI): BEROL® 226 SA (6908)

Korea (TCCL): BEROL® 226 SA (6908)

NZIoC: BEROL® 226 SA (6908)

Section 16. Other Information

Hazardous Material Information System (U.S.A.)

Health	2
Fire Hazard	1
Physical Hazards	0
Personal Protection	

National Fire Protection Association (U.S.A.)



Other Information Berol® is a registered trademark of Akzo Nobel or affiliated companies and is registered in one or more countries including the United States.

Validation Date 5/13/2013.

Previous Validation Date 3/21/2013.

Validated by

Print Date

Phone Number

Elitania Perez

5/13/2013.

312-544-7038

Notice to Reader

The information in the material safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable as of the date of publication. However, no warranty is made as to the accuracy of and/or sufficiency of such information and/or suggestions or as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nothing contained herein shall be construed as granting or extending any license under any patent. Buyer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current.