Material Safety Data Sheet

AKZO NOBEL

MSDS# 15-0296

Section 1. Chemical Product and Company Identification

Product name **JACAAB-ARQUAD 16-50**

Material Uses : Surfactant.

In Case of Emergency

Supplier/ Repacker

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: 314-652-5400

JACAAB LLC
4155 Manchester Avenue
St. Louis, MO 63110
USA

Section 2. Hazards Identification

Physical State Liquid.

Color Colorless to light yellow.

Odor Alcohol like.

Emergency Overview

DANGER!
VERY TOXIC TO AQUATIC ORGANISMS.
CAUSES SEVERE EYE IRRITATION.
CAUSES SKIN IRRITATION.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
MAY BE HARMFUL IF SWALLOWED.
CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS:
GASTROINTESTINAL TRACT.

Keep away from heat, sparks and flame. Avoid contact with eyes, skin and clothing. Do not ingest. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Avoid contact of spilled material and runoff with soil and surface waterways.

Possible Carcinogenic Effects

1-hexadecanaminium, n,n,n-trimethyl-, chloride: IARC, NTP, OSHA, ACGIH: Not listed.
Isopropanol: IARC 3; ACGIH NTP OSHA Not listed.
water: IARC, NTP, OSHA, ACGIH: Not listed.
N,N-dimethyl-1-hexadecanamine-HCL: IARC, NTP, OSHA, ACGIH: Not listed.
1-Hexadecanamine, N,N-dimethyl-,: IARC, NTP, OSHA, ACGIH: Not listed.

Routes of Entry Absorbed through skin. Dermal contact. Eye contact.

See Toxicological Information (section 11)

Section 3. Composition/ Information on Ingredients

Name	CAS #	% by Weight
1-hexadecanaminium, n,n,n-trimethyl-, chloride	112-02-7	45-55
Isopropanol	67-63-0	30-40
water	7732-18-5	5-15
N,N-Dimethyl-1-hexadecanamine-HCl	Not Assigned	0.001-2
1-Hexadecanamine, N,N-dimethyl-,	112-69-6	0.001-2

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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	In case of contact, immediately flush skin with plenty of water for at least 30 minutes while removing contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.
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 contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

Section 5. Fire Fighting Measures

Flammability of the Product	Flammable.
Auto-ignition Temperature	The lowest known value is 399°C (750.2°F) (Isopropanol).
Flash Points	Closed cup: 19°C (66.2°F).
Flammable Limits	The greatest known range is LOWER: 2% UPPER: 12.7% (Isopropanol)
Products of Combustion	These products are carbon oxides (CO, CO_2), nitrogen oxides (NO, NO_2...), halogenated compounds, hydrogen chloride.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Protective Clothing (Fire)	Be sure to use an approved/certified respirator or equivalent.
Special Remarks on Fire Hazards	No sparking tools should be used. Take precautionary measures against static discharges.

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. If necessary: **Use suitable protective equipment (Section 8).**
Large Spill and Leak	Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. **Use suitable protective equipment (Section 8).**

Section 7. Handling and Storage

Handling	Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

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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.

Personal Protection

Eyes Face shield.

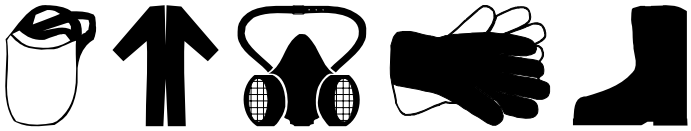
Body Full suit.

Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Feet Boots.

Protective Clothing (Pictograms)



Personal Protection in Case of a Large Spill Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Ingredient Name	Exposure Limits United States
1-hexadecanaminium, n,n,n-trimethyl-, chloride	Not available.
Isopropanol	**ACGIH TLV (United States, 2005). Notes: ACGIH 2003 Adoption Refers to Appendix A -- Carcinogens.** STEL: 400 ppm 15 minute(s). Form: All forms TWA: 200 ppm 8 hour(s). Form: All forms **NIOSH REL (United States, 2001).** STEL: 1225 mg/m^3 15 minute(s). Form: All forms STEL: 500 ppm 15 minute(s). Form: All forms TWA: 980 mg/m^3 10 hour(s). Form: All forms TWA: 400 ppm 10 hour(s). Form: All forms **OSHA PEL (United States, 1997).** TWA: 980 mg/m^3 8 hour(s). Form: All forms TWA: 400 ppm 8 hour(s). Form: All forms **OSHA PEL 1989 (United States, 1989).** STEL: 1225 mg/m^3 15 minute(s). Form: All forms STEL: 500 ppm 15 minute(s). Form: All forms TWA: 980 mg/m^3 8 hour(s). Form: All forms TWA: 400 ppm 8 hour(s). Form: All forms
water	Not available.
N,N-Dimethyl-1-hexadecanamine-HCl	Not available.
1-Hexadecanamine, N,N-dimethyl-,	Not available.

Section 9. Physical and Chemical Properties

Physical State Liquid.

Color Colorless to light yellow.

Odor Alcohol like.

pH Basic.

Boiling/Condensation Point 80°C (176°F)

Melting/Freezing Point 3°C (37.4°F)

Density 0.884 g/cm^3 (7°C / 44.6°F)

Vapor Pressure 5.9 kPa (44 mmHg) (at 20°C)

Vapor Density The highest known value is 2.07 (Air = 1) (Isopropanol).

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Odor Threshold	The lowest known value is 37 to 600 ppm (Isopropanol)
Evaporation Rate	Weighted average: 1.39compared to Butyl acetate.
Solubility	Easily soluble in hot water, acetone. Soluble in cold water, methanol.
Dispersion Properties	See solubility in water, methanol, acetone.
Physical Chemical Comments	Viscosity = 47cp @ 7°C; 37cp @ 12°C; 25cp @ 21°C; 16cp @ 32°C.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Incompatibility with Various Substances	Reactive with OXIDIZING AGENTS.
Hazardous Decomposition Products	These products are halogenated compounds, hydrogen chloride.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

Toxicity to Animals

Ingredient Name or Product name	Test	Result	Route	Species
1-hexadecanaminium, n,n,n-trimethyl-, chloride	LD50	1300 to 1700 mg/kg	Oral	Rat based on data for: (similar material)
	LD50	4300 mg/kg	Dermal	Rabbit
	LDLo	400 mg/kg	Oral	Mouse
Isopropanol	LD50	5045 mg/kg	Oral	Rat
	LD50	6410 mg/kg	Oral	Rabbit
	LD50	3600 mg/kg	Oral	Mouse
	LD50	12800 mg/kg	Dermal	Rabbit
	LDLo	1537 mg/kg	Oral	Dog
	LDLo	3570 mg/kg	Oral	human
	LDLo	5272 mg/kg	Oral	man
	LC50	12000 ppm (8 hour(s))	Inhalation	Rat
	LC50	16970 ppm (4 hour(s))	Inhalation	Rat
1-Hexadecanamine, N,N-dimethyl-,	LD50	2000 mg/kg	Oral	Rat
	LD50	8000 mg/kg	Dermal	Rabbit based on data for: (similar material)

Chronic Effects on Humans	**CARCINOGENIC EFFECTS**: Classified None. by NIOSH [Isopropanol]. Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Isopropanol]. **MUTAGENIC EFFECTS**: Non-mutagenic for bacteria and/or yeast. [Isopropanol]. Contains material which causes damage to the following organs: upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea. Contains material which may cause damage to the following organs: gastrointestinal tract.
Special Remarks on Chronic Effects on Humans	**1-hexadecanaminium, n,n,n-trimethyl-, chloride**: Negative in Cell Transformation study. EC50 (neutral uptake) = 1.0 ug/ml. EC50 (LOH leakage) = 4.2 ug/ml. EC50 (SRB protein) = 1.3 ug/ml.
Acute Effects Skin	Severely irritating to the skin. Practically non-toxic in contact with skin.
Acute Effects Eyes	Severely irritating to the eyes.
Special Remarks on Other Toxic Effects on Humans	: Skin and Sensitization based on data for: (similar material)

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Section 12. Ecological Information

Ecotoxicity

Ingredient Name or Product name	Species	Period	Result
1-hexadecanaminium, n,n,n-trimethyl-, chloride	Lepomis macrochirus (LC50)	96 hour(s)	0.1 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	0.25 mg/l
Isopropanol	Pimephales promelas (EC50)	48 hour(s)	10000 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	>1400 mg/l
	Pimephales promelas (LC50)	96 hour(s)	6550 mg/l
	Pimephales promelas (LC50)	96 hour(s)	9640 mg/l
	Pimephales promelas (LC50)	96 hour(s)	10400 mg/l
	Pimephales promelas (LC50)	96 hour(s)	11130 mg/l

Biodegradability and Ecotoxicity Remarks

1-hexadecanaminium, n,n,n-trimethyl-, chloride: 65% @ 28 day(s) CBT based on data for: (similar material)
1-Hexadecanamine, N,N-dimethyl-,: 59% @ 28 day(s) CBT based on data for: (similar material)

Products of Degradation

These products are carbon oxides (CO, CO_2) and water, nitrogen oxides (NO, NO_2...), halogenated compounds.

Section 13. Disposal Considerations

Waste Information

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

RCRA Classification

Code: D001 Ignitable Waste

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	UN1993	Flammable liquids, n.o.s. (Isopropanol)	3 -	II		-
TDG Classification	UN1993	FLAMMABLE LIQUID, N.O.S. (Isopropanol)	3 -	II		-
IMDG Class	UN1993	FLAMMABLE LIQUID, N.O.S. (Isopropanol)	3 -	II		-
IATA-DGR Class	UN1993	Flammable liquid, n.o.s. (Isopropanol)	3 -	II		-

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Section 15. Regulatory Information

HCS Classification

Flammable liquid
Target organ effects
Corrosive Material

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: ARQUAD® 16-50
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: ARQUAD® 16-50: Fire Hazard

SARA 313 Form R Reporting Requirements

Isopropanol	30-40

SARA 313 Supplier Notification

Isopropanol	30-40

State Regulations

Pennsylvania RTK: Isopropanol: (environmental hazard, generic environmental hazard)
Massachusetts RTK: Isopropanol
New Jersey: Isopropanol

California prop. 65: No products were found.

WHMIS (Canada)

Class B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
Class D-2B: Material causing other toxic effects (TOXIC).

CEPA DSL: 1-hexadecanaminium, n,n,n-trimethyl-, chloride; Isopropanol; water; 1-Hexadecanamine, N,N-dimethyl-,

European Union

Component	EC Number	EC Status	EC Annex
1-hexadecanaminium, n,n,n-trimethyl-, chloride	203-928-6	Not available.	Not available.
Isopropanol	200-661-7	Not available.	603-117-00-0
water	231-791-2	Not available.	Not available.
N,N-Dimethyl-1-hexadecanamine-HCl	Not available.	Not available.	Not available.
1-Hexadecanamine, N,N-dimethyl-,	203-997-2	Not available.	Not available.

Other International Lists

Australia (NICNAS): 1-hexadecanaminium, n,n,n-trimethyl-, chloride; Isopropanol; water; 1-Hexadecanamine, N,N-dimethyl-,

China: 1-hexadecanaminium, n,n,n-trimethyl-, chloride; Isopropanol; water; 1-Hexadecanamine, N,N-dimethyl-,

Germany water class: 1-hexadecanaminium, n,n,n-trimethyl-, chloride; Isopropanol; 1-Hexadecanamine, N,N-dimethyl-,

Japan (MITI): 1-hexadecanaminium, n,n,n-trimethyl-, chloride; Isopropanol; water; 1-Hexadecanamine, N,N-dimethyl-,

Japan (MOL): Isopropanol

Korea (TCCL): 1-hexadecanaminium, n,n,n-trimethyl-, chloride; Isopropanol; water; 1-Hexadecanamine, N,N-dimethyl-,

Philippines (RA6969): 1-hexadecanaminium, n,n,n-trimethyl-, chloride; Isopropanol; water; 1-Hexadecanamine, N,N-dimethyl-,

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Section 16. Other Information

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

Health	3
Fire Hazard	3
Reactivity	0
Personal Protection	

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

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

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Previous Validation Date	5/20/2005.	**Print Date**	5/15/2007.
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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.