Doug Byron RMA # 2110 MN17

ARKEMA
INNOVATIVE CHEMISTRY

SAFETY DATA SHEET

VIKOLOX® 16

1. PRODUCT AND COMPANY IDENTIFICATION

Company

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Oxygenated and Derivatives

Customer Service Telephone Number: 1-800-346-5757
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)

Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: VIKOLOX® 16
Synonyms: 1,2-epoxyhexadecane
Molecular formula: C16 H32 O
Chemical family: alpha olefin oxide
Molecular weight: 240.2 g/mol
Product use: Special applications, in general, acid scavengers, epoxy resin reactive diluent, polyol modification

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: colouriess
Physical state: liquid
Odor: sweet, ether-like

***Classification of the substance or mixture:**
Skin irritation, Category 2, H315
Skin sensitisation, Category 1, H317
Chronic aquatic toxicity, Category 4, H413

*For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labelling

Hazard pictograms:

Signal word: **Warning**

Hazard statements:

H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H413 : May cause long lasting harmful effects to aquatic life.

Precautionary statements:

Prevention:
P261 : Avoid breathing gas/mist/vapours/spray.
P264 : Wash skin thoroughly after handling.
P272 : Contaminated work clothing should not be allowed out of the workplace.
P273 : Avoid release to the environment.
P280 : Wear protective gloves.

Response:
P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.
P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
P362 : Take off contaminated clothing and wash before reuse.

Disposal:
P501 : Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
Oxirane, tetradecyl-	7320-37-8	>= 90 %	H317, H315, H413

1-Hexadecene	629-73-2	<= 5 %	Not classified

**For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

Inhalation:
If inhaled, remove victim to fresh air.

Skin:
In case of contact, immediately flush skin with soap and plenty of water. Get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:
Immediately flush eye(s) with plenty of water.

Ingestion:
If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed:

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information) and Section 11 (Toxicology Information) of this SDS.

4.3. Indication of immediate medical attention and special treatment needed, if necessary:

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

5. FIREFIGHTING MEASURES

Extinguishing media (suitable):
Dry chemical

Extinguishing media (unsuitable):
Water

Protective equipment:
Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:
Do not use water.
Material may spatter or foam if contacted with water.
Do not permit water to enter containers.
Do not allow run-off from fire fighting to enter drains or water courses.
Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:
When burned, the following hazardous products of combustion can occur:
Carbon oxides
Hazardous organic compounds

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:
Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as clean sand, earth, diatomaceous earth or non-acidic clay and place into suitable properly labeled containers for prompt disposal. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Protective equipment:
Appropriate personal protective equipment is set forth in Section 8.

7. HANDLING AND STORAGE

Handling

General information on handling:
Avoid contact with skin, eyes and clothing.
Wash thoroughly after handling.
Emptied container retains vapor and product residue.
Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Storage

General information on storage conditions:
Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage.

Storage stability – Remarks:
Stable under recommended storage conditions.

Storage incompatibility – General:
Store separate from:

Bases

Acids

Oxidizing agents

Water

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

Engineering controls:
Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above).If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Respiratory protection:
Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:
Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

Eye protection:
Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	colourless
Physical state:	liquid
Odor:	sweet, ether-like
Odor threshold:	No data available
Flash point	261 °F (127 °C) (Tag closed cup)
Auto-ignition temperature:	No data available
Lower flammable limit (LFL):	No data available
Upper flammable limit (UFL):	No data available
pH:	No data available
Density:	0.849 g/cm3

Specific Gravity (Relative density):	0.849 Water=1 (liquid)
Vapor pressure:	< 0.01 mmHg (212 °F (100 °C))
Relative vapor density:	8.3 (Air = 1.0)
Vapor density:	8.3 kg/m3
Boiling point/boiling range:	599 °F (315 °C) 760 mmHg
Melting point/range:	68 - 72 °F (20 - 22 °C)
Freezing point:	No data available
Evaporation rate:	< 0.01
	(n-butyl acetate = 1)
Solubility in water:	insoluble
Viscosity, dynamic:	No data available
Molecular weight:	240.2 g/mol
Oil/water partition coefficient:	No data available
Thermal decomposition	No data available
Flammability:	See GHS Classification in Section 2

10. STABILITY AND REACTIVITY

Stability:
This material is chemically stable under normal and anticipated storage, handling and processing conditions.

Hazardous reactions:
Hazardous polymerization does not occur.

Materials to avoid:
Bases
Oxidizing agents
A low energy release may result on contact with:
Acids
Water

Conditions / hazards to avoid:
See HANDLING AND STORAGE section of this SDS for specified conditions. See Hazardous Decomposition Products below.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products
Carbon oxides
Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Inhalation:
4 h Acute toxicity estimate > 10 mg/l. (Aerosol)

Data for Oxirane, tetradecyl- (7320-37-8)

Acute toxicity

Oral:
No deaths occurred. (rat) LD0 > 5,000 mg/kg.

Dermal:
May be harmful in contact with skin. (rat) LD50 > 2,000 mg/kg.

Inhalation:
No deaths occurred. (rat) 8 h LC0 (vapour)

Skin Irritation:
Causes skin irritation. (rabbit) Irritation Index: 5.0/8.0. (4 h)

Eye Irritation:
Causes mild eye irritation. (rabbit) Irritation Index: 2/110.

Skin Sensitization:
May cause an allergic skin reaction. Repeated skin exposure. (guinea pig) Skin allergy was observed.

Repeated dose toxicity
Subchronic dermal administration to rat and mouse / affected organ(s): skin / signs: Local irritation / No adverse systemic effects reported.

Carcinogenicity
Chronic dermal administration to rat, mouse / signs: No increase in tumor incidence was reported.

Genotoxicity

Assessment in Vitro:
No genetic changes were observed in laboratory tests using: bacteria

Both positive and negative responses for genetic changes were observed in laboratory tests using: animal cells

Reproductive effects
Reproductive/Developmental Effects Screening Assay. Oral (rat) / No toxicity to reproduction.

Data for 1-Hexadecene (629-73-2)

Acute toxicity

Oral:
Practically nontoxic. (Rat) LD50 > 10,000 mg/kg.

Dermal:
Practically nontoxic. (Rabbit) LD50 > 10,000 mg/kg.

Inhalation:
Practically nontoxic. (Rat) 4 h LC50 = 6.4 mg/l. (aerosol)

No deaths occurred. (Rat) 1 h LC0 > 8.5 mg/l. signs: Central nervous system effects (aerosol)

Skin Irritation:
Causes mild skin irritation. (Rabbit) Irritation Index: 0.9 - 2.4/8.0. (4 h)

Eye Irritation:
Not irritating. (Rabbit) Irritation Index: < 1/110.

Skin Sensitization:
Not a sensitizer. Buehler Test. (Guinea pig) No skin allergy was observed

Genotoxicity

Assessment in Vitro:
No genetic changes were observed in laboratory tests using: bacteria

Genotoxicity

Assessment in Vivo:
No genetic changes were observed in laboratory tests using: mice

Other information
Aspiration hazard

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway
Data on this material and/or its components are summarized below.

Data for Oxirane, tetradecyl- (7320-37-8)

Biodegradation:
Not readily biodegradable. (20 d) 26 % / undissolved material present in test system

Octanol Water Partition Coefficient:
log Pow > 5

Data for 1-Hexadecene (629-73-2)

Biodegradation:
Readily biodegradable. (28 d) biodegradation 55 - 77 %

Octanol Water Partition Coefficient:
log Pow = 8.06

Ecotoxicology
Data on this material and/or its components are summarized below.

Data for Oxirane, tetradecyl- (7320-37-8)

Aquatic toxicity data:
No effect up to the limit of solubility. Lebistes reticulatus 14 d (semi-static test)

Aquatic invertebrates:
Toxic. Daphnia magna (Water flea) 48 h EC50 = 1.2 mg/l (nominal concentrations reported, methanol used as cosolvent)

Microorganisms:
No effect up to the limit of solubility. Bacteria IC50 > 5,000 mg/l (nominal concentrations reported, undissolved material present in test system)

Data for 1-Hexadecene (629-73-2)

Aquatic toxicity data:
No effect up to the limit of solubility. Oncorhynchus mykiss (rainbow trout) 96 h (Water accommodated fraction was tested.)

Aquatic invertebrates:
No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h (Water accommodated fraction was tested.)

Algae:
No effect up to the limit of solubility. Selenastrum capricornutum (green algae) 72 h (Water accommodated fraction was tested.)

13. DISPOSAL CONSIDERATIONS

Waste disposal:
Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. 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.

Take appropriate measures to prevent release to the environment.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT)

UN Number	:	3082
Proper shipping name	:	Environmentally hazardous substances, liquid, n.o.s.
Class	:	9
Packaging group	:	III
Marine pollutant	:	yes

International Maritime Dangerous Goods Code (IMDG)

UN Number	:	3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class	:	9
Packaging group	:	III
Marine pollutant	:	yes
Flash point	:	261 °F (127 °C) Tag closed cup

15. REGULATORY INFORMATION

Chemical Inventory Status

EU. EINECS	EINECS	Conforms to
United States TSCA Inventory	TSCA	The components of this product are all on the TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	This product contains one or several components listed in the Canadian NDSL list. All other components are on the DSL list.
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Conforms to
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Conforms to
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Does not conform
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Conforms to
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:
Acute Health Hazard

SARA Title III – Section 313 Toxic Chemicals:
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

United States – State Regulations

New Jersey Right to Know

No components are subject to the New Jersey Right to Know Act.

Pennsylvania Right to Know

Chemical name	CAS-No.
Oxirane, tetradecyl-	7320-37-8

California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H413 May cause long lasting harmful effects to aquatic life.

Latest Revision(s):

Reference number:	000000033237
Date of Revision:	05/06/2016
Date Printed:	05/30/2016

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Arkema has implemented a Medical Policy regarding the use of Arkema products in Medical Devices applications that are in contact with the body or circulating bodily fluids (http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html).Arkema has designated Medical grades to be used for such Medical Device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in Medical Device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema products in Medical Device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices , and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices.
It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies) It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.