AchievAL Fire Resistant Hydraulic Fluid 200

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 08/15/2017 Supersedes: 04/10/2017 Version: 5.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : AchievAL Fire Resistant Hydraulic Fluid 200

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Water/Glycol Hydraulic Fluid

Restrictions on use : No additional information available

1.3. Details of the supplier of the safety data sheet

KOST® USA, Inc.
1000 Tennessee Ave.
Cincinnati, 45229 - USA
T 1-800-661-9391 - F 1-513-492-5555
sales@kostusa.com - www.kostusa.com

1.4. Emergency telephone number

Emergency number : 1-800-424-9300
CHEMTREC (24 HOURS)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral), Category 4	H302
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 1	H318
Specific target organ toxicity — Repeated exposure, Category 2	H373

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS05 GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US) :
P260 - Do not breathe mist, spray, vapours
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear eye protection, protective gloves
P301+P312 - If swallowed: Call a doctor if you feel unwell
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor
P314 - Get medical advice/attention if you feel unwell
P321 - Specific treatment (see First aid measures on this label)
P330 - Rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose of contents/container to Collection point

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Diethylene glycol	(CAS-No.) 111-46-6	40 – 50	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1)	(CAS-No.) 52624-57-4	10 – 15	Eye Dam. 1, H318
N,N-Dimethylethanolamine	(CAS-No.) 108-01-0	1 – 2	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1B, H314 STOT SE 3, H335
capric acid	(CAS-No.) 334-48-5	1 – 2	Skin Irrit. 2, H315 Eye Irrit. 2A, H319

***Chemical name, CAS number and/or exact concentration have been withheld as a trade secret**

Full text of hazard classes and H-statements : see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : If you feel unwell, seek medical advice. If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : Causes damage to organs.

Symptoms/effects after inhalation : Inhalation may cause: irritation, coughing, shortness of breath. Irritation of the respiratory tract and the other mucous membranes.

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Large fires: fog. Foam. Water spray. Small fires: Dry powder. Carbon dioxide. Sand.

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : No specific fire or explosion hazard.

Explosion hazard : Product is not explosive.

Reactivity : Hazardous polymerization will not occur.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Avoid all eye and skin contact and do not breathe vapour and mist. Wear suitable protective clothing and gloves. Nitrile gloves. Chemical goggles or safety glasses.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Avoid all eye and skin contact and do not breathe vapour and mist. Wear suitable protective clothing and gloves. Nitrile rubber. Chemical goggles or face shield with safety glasses.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Absorb and/or contain spill with inert material, then place in suitable container.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide good ventilation in process area to prevent formation of vapour. Avoid breathing mist/vapour/spray. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Keep away from sources of ignition - No smoking.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Contaminated work clothing should not be allowed out of the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool well ventilated place. Keep away from heat, flame, and sources of ignition. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids. Strong oxidizers.

Incompatible materials : Sources of ignition. Heat sources.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Diethylene glycol (111-46-6)
Not applicable

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)
Not applicable

capric acid (334-48-5)
Not applicable

N,N-Dimethylethanolamine (108-01-0)
Not applicable

8.2. Exposure controls

Appropriate engineering controls : Avoid creating mist or spray. Avoid splashing. Eyewash stations. Provide local exhaust ventilation of closed transfer systems to minimize exposures.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear suitable gloves. nitrile rubber gloves. neoprene gloves. PVC.

Eye protection : Chemical goggles or face shield. Use splash goggles when eye contact due to splashing is possible.

Skin and body protection : Wear suitable protective clothing. Impervious clothing.

Respiratory protection	:	Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Use an approved respirator equipped with oil/mist cartridges.
Other information	:	Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	red Orange
Odour	:	Amine-like
Odour threshold	:	No data available
pH	:	9 - 10
Melting point	:	< -40 °C
Freezing point	:	< -40 °C
Boiling point	:	Foams
Flash point	:	None
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Vapour pressure	:	< 0.01 mm Hg @ 20°C
Relative density	:	No data available
Relative vapour density at 20 °C	:	No data available
Density	:	1.0874
Solubility	:	Soluble in water.
Log Pow	:	No data available
Auto-ignition temperature	:	260 °C
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Hazardous polymerization will not occur.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Exposure to extremely high temperatures. Heat. Keep away from sources of ignition.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

10.6. Hazardous decomposition products

Aldehydes. alcohols. Ethers. Thermal decomposition generates : Carbon monoxide. Carbon oxides (CO, CO2). Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	:	Inhalation; Skin and eye contact
Acute toxicity	:	Oral: Harmful if swallowed.

AchievAL Fire Resistant Hydraulic Fluid 200	
ATE US (oral)	1063.3337229366 mg/kg bodyweight

Diethylene glycol (111-46-6)	
LD50 dermal rat	13300 mg/kg
LC50 inhalation rat (mg/l)	> 4.6 mg/l/4h
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	13300 mg/kg bodyweight

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)	
LD50 oral rat	> 2000 mg/kg bodyweight no mortality occurred

capric acid (334-48-5)	
LD50 oral rat	> 10000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg bodyweight

N,N-Dimethylethanolamine (108-01-0)	
LD50 oral rat	1187 mg/kg
LD50 dermal rabbit	> 3000 mg/kg
LC50 inhalation rat (mg/l)	6080 mg/m³ 4 hours
ATE US (oral)	1187 mg/kg bodyweight
ATE US (dermal)	1100 mg/kg bodyweight
ATE US (dust,mist)	1.5 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Symptoms/effects after inhalation : Inhalation may cause: irritation, coughing, shortness of breath. Irritation of the respiratory tract and the other mucous membranes.

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecotoxicological data about this product are known.

Diethylene glycol (111-46-6)	
LC50 fish 1	75200 mg/l
EC50 Daphnia 1	> 10000 mg/l

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)	
LC50 fish 1	> 10000 mg/l

capric acid (334-48-5)	
LC50 fish 1	> 100 mg/l
EC50 other aquatic organisms 1	> 100 mg/l

N,N-Dimethylethanolamine (108-01-0)	
LC50 fish 1	146.63 mg/l
EC50 Daphnia 1	98.37 mg/l
EC50 other aquatic organisms 1	34.47 mg/l

12.2. Persistence and degradability

AchievAL Fire Resistant Hydraulic Fluid 200	
Biochemical oxygen demand (BOD)	1.44 ppm
Chemical oxygen demand (COD)	2.52 ppm

Diethylene glycol (111-46-6)	
Persistence and degradability	Readily biodegradable.

capric acid (334-48-5)	
Persistence and degradability	Readily biodegradable.

N,N-Dimethylethanolamine (108-01-0)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

AchievAL Fire Resistant Hydraulic Fluid 200	
Bioaccumulative potential	Not established.

Diethylene glycol (111-46-6)	
Bioconcentration factor (BCF REACH)	100
Log Pow	-1.98
Bioaccumulative potential	Not expected to bioaccumulate.

capric acid (334-48-5)	
Log Pow	4.09

N,N-Dimethylethanolamine (108-01-0)	
Log Pow	-0.55
Bioaccumulative potential	This product is not bioaccumulating.

12.4. Mobility in soil

AchievAL Fire Resistant Hydraulic Fluid 200	
Ecology - soil	No additional information available.

12.5. Other adverse effects

Other information : No additional information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Additional information : In its present state, this product is not a hazardous waste according to Federal Regulations (40 CFFR261.4 (b)(4)).

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated.

Transport by sea

Not regulated.

Air transport

Not regulated.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) **(52624-57-4)**	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e, Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).

15.2. International regulations

CANADA

Diethylene glycol (111-46-6)
Listed on the Canadian DSL (Domestic Substances List) inventory.

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) **(52624-57-4)**
Listed on the Canadian DSL (Domestic Substances List) inventory.

capric acid (334-48-5)
Listed on the Canadian DSL (Domestic Substances List) inventory.

N,N-Dimethylethanolamine (108-01-0)
Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

Diethylene glycol (111-46-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) **(52624-57-4)**
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

capric acid (334-48-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

N,N-Dimethylethanolamine (108-01-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Diethylene glycol (111-46-6)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the AICS (Australian Inventory of Chemical Substances) Listed on Taiwan National Chemical Inventory Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on KECI (Korean Existing Chemicals Inventory) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) **(52624-57-4)**
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on Taiwan National Chemical Inventory Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the AICS (Australian Inventory of Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on KECI (Korean Existing Chemicals Inventory)

capric acid (334-48-5)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the AICS (Australian Inventory of Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals)

N,N-Dimethylethanolamine (108-01-0)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the AICS (Australian Inventory of Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

N,N-Dimethylethanolamine (108-01-0)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Disclaimer:
Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

End-use applications **NOT** supported by KOST® USA, Inc. for monoethylene glycol, diethylene glycol and triethylene glycol. These limitations include products restricted by law, applications in which may raise unacceptable risks, and other applications which KOST® USA, Inc. has decided not to, including minimizing unnecessary risk and liabilities to the company. KOST® USA, Inc. does not knowingly market these products into these non-supported applications. This list is not all-inclusive, and KOST® USA, Inc. reserves the right to modify the same at any time.

- The use of production of tobacco and in the manufacture of tobacco products (including but not limited to additives, humectants, filters, inks, and paper)
- The use for the generation of artificial smoke / theatrical fogs / mist. This includes applications such as artificial / e-cigarettes.
- The use as ingredient in fuel for warming foods (Sterno™-like application) or in fuel for heating an enclosed space where human exposure is possible.
- The use in fire extinguishing sprinkler systems.
- The use in the manufacture of munitions.
- The use in the production of de-icers for use on roadways, sidewalks and in aircraft lavatories.
- The use as a component of heat transfer fluids in systems where the heat transfer fluids could infiltrate (i.e., via an exchanger leak, backflow prevention failure, or other means) a potable water.
- The use as a non-reacted component in a formulation for direct internal or external human / animal contact, including, but not limited to ingestion, inhalation, and skin contact and in medical / veterinary devices and medial / veterinary. Examples of some such applications are uses as a direct component in foods, beverages, pharmaceuticals, cosmetics, personal care products or children's products.
- The use for consumer or hospital usage for deodorizing or air "purifying" purposes by spraying as an aerosol.
- The use as a non-reacted component in adhesives, plasticizers, and softening agents for packaging having direct contact with food or beverage.
- The use as a non-reacted component in the formulation of glues, pastes, ice / heat packs or other items where the potential for significant human contact and/or ingestion exists (including but not limited to children's school glue/paste or arts/craft glue/paste, toys, children products).
- The use as a fluid for pressure testing piping.

For more information contact your KOST® USA, Inc. representative.

Revision date : 08/15/2017

Data sources : ACGIH (American Conference of Government Industrial Hygienists).

European Chemicals Agency (ECHA) Registered Substances list. Accessed at http://echa.europa.eu/.

Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html.

Other information : None.

Full text of H-statements:

H226	Flammable liquid and vapour
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure

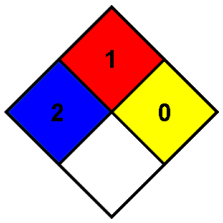
Abbreviations and acronyms:

	ACGIH (American Conference of Government Industrial Hygienists)
	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	CLP: Classification, Labelling, Packaging.
	EC50: Environmental Concentration associated with a response by 50% of the test population.
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals
	OSHA: Occupational Safety & Health Administration
	LD50: Lethal Dose for 50% of the test population
	STEL: Short Term Exposure Limits
	TSCA: Toxic Substances Control Act
	TWA: Time Weighted Average

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Indication of changes:
Product identifier.

SDS prepared by: The Redstone Group, LLC.
6077 Frantz Rd
Suite 206
Dublin, Ohio USA 43016
614.923.7472
www.redstonegrp.com

AchievAL FRH 5226 Concentrate

Safety Data Sheet 3-5226

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 04/03/2012 Revision date: 02/27/2019 Supersedes: 07/22/2016 Version: 5.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : AchievAL FRH 5226 Concentrate

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Water/Glycol Hydraulic Fluid

Restrictions on use : No additional information available

1.3. Supplier

KOST® USA, Inc.
1000 Tennessee Ave.
Cincinnati, 45229 - USA
T 1-800-661-9391 - F 1-513-492-5555
sales@kostusa.com-www.kostusa.com

1.4. Emergency telephone number

Emergency number : 1-800-424-9300
CHEMTREC (24 HOURS)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Tox. 4 (Oral)	H302	Harmful if swallowed.
Skin Irrit. 2	H315	Causes skin irritation.
Eye Dam. 1	H318	Causes serious eye damage.
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure.

Full text of hazard classes and H-statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) : H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS US) : P260 - Do not breathe mist, spray, vapours.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product
P280 - Wear eye protection, protective gloves.
P301+P312 - If swallowed: Call a doctor, a POISON CENTER if you feel unwell
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a doctor
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment (see First aid measures on this label)
P330 - Rinse mouth.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P501 - Dispose of contents/container to Dispose in a safe manner in accordance with local/national regulations

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Diethylene glycol	(CAS-No.) 111-46-6	65 - 75	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1)	(CAS-No.) 52624-57-4	15 - 25	Eye Dam. 1, H318
N,N-Dimethylethanolamine	(CAS-No.) 108-01-0	2 - 3	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1B, H314 STOT SE 3, H335
capric acid	(CAS-No.) 334-48-5	1 - 2	Skin Irrit. 2, H315 Eye Irrit. 2A, H319

***Chemical name, CAS number and/or exact concentration have been withheld as a trade secret**

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash with plenty of water/…. If skin irritation occurs: Get immediate medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER/doctor if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : Causes damage to organs.

Symptoms/effects after inhalation : Inhalation may cause: irritation, coughing, shortness of breath.

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Immediate medical attention and special treatment, if necessary

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Water spray. fog. Small fires: Dry powder. Carbon dioxide. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : No specific fire or explosion hazard.

Explosion hazard : Product is not explosive.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Avoid all eye and skin contact and do not breathe vapour and mist. Wear suitable gloves. Nitrile gloves. Chemical goggles or safety glasses.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Wear suitable gloves. Nitrile rubber. Chemical goggles or safety glasses.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Absorb and/or contain spill with inert material, then place in suitable container. Do not allow minor leaks or spills to accumulate on walking surfaces.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like cermiculite, sand, or earth to soak up the product and place into a container for later disposal. Collect spillage.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing mist/vapour/spray. Do not eat, drink or smoke when using this product. Keep away from sources of ignition - No smoking.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Contaminated work clothing should not be allowed out of the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool well ventilated place. Keep away from heat, flame, and sources of ignition. Keep away from combustible material. Keep container tightly closed. Do not store near food, foodstuffs, drugs, or potable water supplies.

Incompatible products : Strong bases. Strong oxidizers. Strong acids.

Incompatible materials : Sources of ignition.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Diethylene glycol (111-46-6)
Not applicable

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)
Not applicable

N,N-Dimethylethanolamine (108-01-0)
Not applicable

capric acid (334-48-5)
Not applicable

8.2. Appropriate engineering controls

Appropriate engineering controls : Avoid creating mist or spray. Avoid splashing. Provide local exhaust ventilation of closed transfer systems to minimize exposures.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Wear suitable gloves. nitrile rubber gloves

Eye protection:

Chemical goggles or face shield. Use splash goggles when eye contact due to splashing is possible

Skin and body protection:

Wear suitable protective clothing. Impervious clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Use an approved respirator equipped with oil/mist cartridges.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	red Orange
Odour	:	Amine-like
Odour threshold	:	No data available
pH	:	9 - 10
Melting point	:	< -40 °C
Freezing point	:	< -40 °C
Boiling point	:	foams
Flash point	:	149 °C
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	Non flammable.
Vapour pressure	:	< 0.01 mm Hg @ 20°C
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Density	:	1.105
Solubility	:	Soluble in water.
Log Pow	:	No data available
Auto-ignition temperature	:	260 °C
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	No data available
Explosive properties	:	Product is not explosive.
Oxidising properties	:	No oxidizing properties.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Extremely high or low temperatures. Heat. Keep away from sources of ignition.

10.5. Incompatible materials

Strong bases. Strong acids. Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Nitrogen oxides. Ethers. alcohols. Aldehydes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

ATE US (oral)	694.121 mg/kg bodyweight

Diethylene glycol (111-46-6)	
LD50 dermal rat	13300 mg/kg
LC50 inhalation rat (mg/l)	> 4.6 mg/l/4h
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	13300 mg/kg bodyweight

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)	
LD50 oral rat	> 2000 mg/kg bodyweight no mortality occurred

N,N-Dimethylethanolamine (108-01-0)	
LD50 oral rat	1187 mg/kg
LD50 dermal rabbit	> 3000 mg/kg
LC50 inhalation rat (mg/l)	6080 mg/m³ 4 hours
ATE US (oral)	1187 mg/kg bodyweight
ATE US (dermal)	1100 mg/kg bodyweight
ATE US (dust,mist)	1.5 mg/l/4h

capric acid (334-48-5)	
LD50 oral rat	> 10000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg bodyweight

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Reproductive toxicity : Not classified
STOT-single exposure : Not classified

N,N-Dimethylethanolamine (108-01-0)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Diethylene glycol (111-46-6)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified
Viscosity, kinematic : No data available

Likely routes of exposure : Inhalation. Skin and eye contact.
Symptoms/effects : Causes damage to organs.

Symptoms/effects after inhalation	:	Inhalation may cause: irritation, coughing, shortness of breath.
Symptoms/effects after skin contact	:	Causes skin irritation.
Symptoms/effects after eye contact	:	Causes serious eye damage.
Symptoms/effects after ingestion	:	Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecotoxicological data about this product are known.

Diethylene glycol (111-46-6)	
LC50 fish 1	75200 mg/l
EC50 Daphnia 1	> 10000 mg/l

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)	
LC50 fish 1	> 10000 mg/l

N,N-Dimethylethanolamine (108-01-0)	
LC50 fish 1	146.63 mg/l
EC50 Daphnia 1	98.37 mg/l
EC50 other aquatic organisms 1	34.47 mg/l

capric acid (334-48-5)	
LC50 fish 1	> 100 mg/l
EC50 other aquatic organisms 1	> 100 mg/l

12.2. Persistence and degradability

AchievAL FRH 5226 Concentrate	
Persistence and degradability	Not established.

Diethylene glycol (111-46-6)	
Persistence and degradability	Readily biodegradable.

N,N-Dimethylethanolamine (108-01-0)	
Persistence and degradability	Readily biodegradable.

capric acid (334-48-5)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

AchievAL FRH 5226 Concentrate	
Bioaccumulative potential	Not established.

Diethylene glycol (111-46-6)	
Bioconcentration factor (BCF REACH)	100
Log Pow	-1.98
Bioaccumulative potential	Not expected to bioaccumulate.

N,N-Dimethylethanolamine (108-01-0)	
Log Pow	-0.55
Bioaccumulative potential	This product is not bioaccumulating.

capric acid (334-48-5)	
Log Pow	4.09

12.4. Mobility in soil

AchievAL FRH 5226 Concentrate	
Ecology - soil	No additional information available.

12.5. Other adverse effects

Other information : No additional information available.

SECTION 13: Disposal considerations

13.1. Disposal methods

Sewage disposal recommendations	:	Do not dispose of waste into sewer.
Waste disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations.
Additional information	:	In its present state, this product is not a hazardous waste according to Federal Regulations (40 CFFR261.4 (b)(4)).
Ecology - waste materials	:	Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated.

Transport by sea

Not regulated.

Air transport

Not regulated.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).

15.2. International regulations

CANADA

Diethylene glycol (111-46-6)
Listed on the Canadian DSL (Domestic Substances List) inventory.

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)
Listed on the Canadian DSL (Domestic Substances List) inventory.

N,N-Dimethylethanolamine (108-01-0)
Listed on the Canadian DSL (Domestic Substances List) inventory.

capric acid (334-48-5)
Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

Diethylene glycol (111-46-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

N,N-Dimethylethanolamine (108-01-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

capric acid (334-48-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Diethylene glycol (111-46-6)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the AICS (Australian Inventory of Chemical Substances) Listed on Taiwan National Chemical Inventory Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on KECI (Korean Existing Chemicals Inventory) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on Taiwan National Chemical Inventory Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the AICS (Australian Inventory of Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on KECI (Korean Existing Chemicals Inventory)

N,N-Dimethylethanolamine (108-01-0)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the AICS (Australian Inventory of Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals)

capric acid (334-48-5)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the AICS (Australian Inventory of Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals)

15.3. US State regulations

⚠ **WARNING:** This product can expose you to Ethylene oxide, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Component	Carcinogenicity	Developmental toxicity	Reproductive toxicity male	Reproductive toxicity female	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
1,4-dioxane(123-91-1)	X				30 µg/day	
Propylene oxide(75-56-9)	X					
Ethylene oxide(75-21-8)	X	X	X	X	2 µg/day	20 µg/day

Component	State or local regulations
N,N-Dimethylethanolamine(108-01-0)	U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Disclaimer:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).
For more information contact your KOST® USA, Inc. representative.

End-use applications **NOT** supported by KOST® USA, Inc. for monoethylene glycol, diethylene glycol and triethylene glycol. These limitations include products restricted by law, applications in which may raise unacceptable risks, and other applications which KOST® USA, Inc. has decided not to, including minimizing unnecessary risk and liabilities to the company. KOST® USA, Inc. does not knowingly market these products into these non-supported applications. This list is not all-inclusive, and KOST® USA, Inc. reserves the right to modify the same at any time.

- The use of production of tobacco and in the manufacture of tobacco products (including but not limited to additives, humectants, filters, inks, and paper)
- The use for the generation of artificial smoke / theatrical fogs / mist. This includes applications such as artificial / e-cigarettes.
- The use as ingredient in fuel for warming foods (Sterno™-like application) or in fuel for heating an enclosed space where human exposure is possible.
- The use in fire extinguishing sprinkler systems.
- The use in the manufacture of munitions.
- The use in the production of de-icers for use on roadways, sidewalks and in aircraft lavatories.
- The use as a component of heat transfer fluids in systems where the heat transfer fluids could infiltrate (i.e., via an exchanger leak, backflow prevention failure, or other means) a potable water.
- The use as a non-reacted component in a formulation for direct internal or external human / animal contact, including, but not limited to ingestion, inhalation, and skin contact and in medical / veterinary devices and medial / veterinary. Examples of some such applications are uses as a direct component in foods, beverages, pharmaceuticals, cosmetics, personal care products or children's products.
- The use for consumer or hospital usage for deodorizing or air "purifying" purposes by spraying as an aerosol.
- The use as a non-reacted component in adhesives, plasticizers, and softening agents for packaging having direct contact with food or beverage.
- The use as a non-reacted component in the formulation of glues, pastes, ice / heat packs or other items where the potential for significant human contact and/or ingestion exists (including but not limited to children's school glue/paste or arts/craft glue/paste, toys, children products).
- The use as a fluid for pressure testing piping.

Revision date	:	02/27/2019
Data sources	:	European Chemicals Agency (ECHA) Registered Substances list. Accessed at http://echa.europa.eu/. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition. ACGIH (American Conference of Government Industrial Hygienists). OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html. Canadian Centre for Occupational Health and Safety. Accessed at: http://www.ccohs.ca/oshanswers/legisl/whmis_classifi.html.
Other information	:	None.

Full text of H-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 3	Flammable liquids, Category 3
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

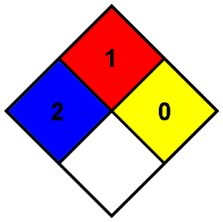
Abbreviations and acronyms:

	ACGIH (American Conference of Government Industrial Hygienists)
	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	CLP: Classification, Labelling, Packaging.
	EC50: Environmental Concentration associated with a response by 50% of the test population.
	LD50: Lethal Dose for 50% of the test population
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals
	OSHA: Occupational Safety & Health Administration
	STEL: Short Term Exposure Limits
	TSCA: Toxic Substances Control Act
	TWA: Time Weighted Average

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Indication of changes:
Composition/information on ingredients.

SDS Prepared by: The Redstone Group
6077 Frantz Rd.
Suite 206
Dublin, Ohio, USA 43016
614.923.7472
www.redstonegrp.com

AchievAL RA Inhibitor

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 04/10/2017 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Substance

Substance name : AchievAL RA Inhibitor

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Inhibitor

Restrictions on use : No additional information available

1.3. Details of the supplier of the safety data sheet

KOST® USA, Inc.
1000 Tennessee Ave.
Cincinnati, 45229 - USA
T 1-800-661-9391 - F 1-513-492-5555
sales@kostusa.com - www.kostusa.com

1.4. Emergency telephone number

Emergency number : 1-800-424-9300
CHEMTREC (24 HOURS)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids, Category 3	H226
Acute toxicity (oral), Category 4	H302
Acute toxicity (dermal), Category 4	H312
Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin corrosion/irritation, Category 1B	H314
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS02 GHS05 GHS07

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H226 - Flammable liquid and vapour
H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) : P210 - Keep away from heat, sparks, open flames. - No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P260 - Do not breathe mist, spray, vapours
P261 - Avoid breathing mist, spray, vapours
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection, face shield, protective gloves, protective clothing
P301+P312 - If swallowed: Call a doctor if you feel unwell
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P302+P352 - If on skin: Wash with plenty of soap, Water
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing

P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor
P312 - Call a doctor if you feel unwell
P321 - Specific treatment (see First aid measures on this label)
P322 - Specific treatment (see First aid measures on this label)
P330 - Rinse mouth
P362+P364 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), Dry chemical to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : AchievAL RA Inhibitor

Name	Product identifier	%	GHS-US classification
N,N-Dimethylethanolamine	(CAS-No.) 108-01-0	100	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1B, H314 STOT SE 3, H335

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician. Wash with plenty of soap and water. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause respiratory irritation.

Symptoms/effects after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin. Causes severe skin burns and eye damage.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapour. Flammable vapours may accumulate in the container. Heavier than air, vapours may travel long distances along ground, ignite and flash back to source.

Explosion hazard : May form flammable/explosive vapour-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity : Thermal decomposition generates : Corrosive vapours.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking. Do not get in eyes, on skin, or on clothing. Do not breathe vapour. Do not breathe aerosol. Use personal protective equipment as required.

6.1.1. For non-emergency personnel

Protective equipment : Refer to section 8.2.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Refer to section 8.2.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Do not get in eyes, on skin, or on clothing. Do not breathe vapours. Wear proper protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical, lighting, ventilating equipment. Comply with applicable regulations.

Storage conditions : Keep container tightly closed. Keep only in original container.

Incompatible products : Strong bases. Strong acids. Strong oxidizers.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

Heat and ignition sources	:	Keep away from heat, sparks and flame.
Prohibitions on mixed storage	:	Incompatible materials.
Storage area	:	Store in dry, cool, well-ventilated area.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

N,N-Dimethylethanolamine (108-01-0)
Not applicable

8.2. Exposure controls

Appropriate engineering controls	:	Avoid splashing. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure that there is a suitable ventilation system. Provide adequate general and local exhaust ventilation.
Personal protective equipment	:	Avoid all unnecessary exposure.
Hand protection	:	Wear suitable gloves resistant to chemical penetration. Industrial and professional. Perform risk assessment prior to use.
Eye protection	:	Chemical goggles or safety glasses. Face shield.
Skin and body protection	:	Wear suitable protective clothing. Impervious clothing. Foot protection.
Respiratory protection	:	In case of insufficient ventilation, wear suitable respiratory equipment. Use an approved respirator equipped with oil/mist cartridges. Approved organic vapour respirator.
Environmental exposure controls	:	Prevent leakage or spillage. Prevent contaminated water run-off.
Other information	:	Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	Colourless
Odour	:	ammoniacal
Odour threshold	:	No data available
pH	:	No data available
Melting point	:	-59 °C
Freezing point	:	No data available
Boiling point	:	134.1 °C
Flash point	:	39 °C
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Vapour pressure	:	816 Pa @ 20 °C
Relative density	:	No data available
Relative vapour density at 20 °C	:	No data available
Solubility	:	No data available
Log Pow	:	-0.25
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability

Flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. May release flammable gases. Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact

Acute toxicity : Oral: Harmful if swallowed. Dermal: Harmful in contact with skin. Inhalation:dust,mist: Harmful if inhaled.

AchievAL RA Inhibitor	
ATE US (oral)	1187.000 mg/kg bodyweight
ATE US (dermal)	1100.000 mg/kg bodyweight
ATE US (dust,mist)	1.500 mg/l/4h

N,N-Dimethylethanolamine (108-01-0)	
LD50 oral rat	1187 mg/kg
LD50 dermal rabbit	> 3000 mg/kg
LC50 inhalation rat (mg/l)	6080 mg/m³ 4 hours
ATE US (oral)	1187.000 mg/kg bodyweight
ATE US (dermal)	1100.000 mg/kg bodyweight
ATE US (dust,mist)	1.500 mg/l/4h

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/effects after inhalation : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause respiratory irritation.

Symptoms/effects after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin. Causes severe skin burns and eye damage.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

N,N-Dimethylethanolamine (108-01-0)	
LC50 fish 1	146.63 mg/l

N,N-Dimethylethanolamine (108-01-0)	
EC50 Daphnia 1	98.37 mg/l
EC50 other aquatic organisms 1	34.47 mg/l

12.2. Persistence and degradability

AchievAL RA Inhibitor	
Persistence and degradability	Not established.

N,N-Dimethylethanolamine (108-01-0)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

AchievAL RA Inhibitor	
Log Pow	-0.25

N,N-Dimethylethanolamine (108-01-0)	
Log Pow	-0.55
Bioaccumulative potential	This product is not bioaccumulating.

12.4. Mobility in soil

AchievAL RA Inhibitor	
Ecology - soil	Not established.

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN2051 2-Dimethylaminoethanol, 8 (3), II

UN-No.(DOT) : UN2051

Proper Shipping Name (DOT) : 2-Dimethylaminoethanol

Transport hazard class(es) (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Packing group (DOT) : II - Medium Danger

Subsidiary risk (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 8 - Corrosive
3 - Flammable liquid

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 243

DOT Special Provisions (49 CFR 172.102)	:	B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	30 L
DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
Emergency Response Guide (ERG) Number	:	132
Other information	:	No supplementary information available.

Transport by sea

UN-No. (IMDG)	:	2051
Proper Shipping Name (IMDG)	:	2-DIMETHYLAMINOETHANOL
Class (IMDG)	:	8 - Corrosive substances
Packing group (IMDG)	:	II - substances presenting medium danger
Subsidiary risk (IMDG)	:	3 - Flammable liquids
Limited quantities (IMDG)	:	1 L

Air transport

UN-No. (IATA)	:	2051
Proper Shipping Name (IATA)	:	2-Dimethylaminoethanol
Class (IATA)	:	8 - Corrosives
Packing group (IATA)	:	II - Medium Danger
Subsidiary risks (IATA)	:	3 - Flammable liquids

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

N,N-Dimethylethanolamine (108-01-0)
Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

N,N-Dimethylethanolamine (108-01-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

N,N-Dimethylethanolamine (108-01-0)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the AICS (Australian Inventory of Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

N,N-Dimethylethanolamine (108-01-0)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Data sources : ACGIH (American Conference of Government Industrial Hygienists).

European Chemicals Agency (ECHA) C&L Inventory database. Accessed at http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database.

Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition.

Other information : None.

Full text of H-statements:

H226	Flammable liquid and vapour
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H332	Harmful if inhaled
H335	May cause respiratory irritation

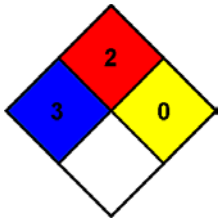
Abbreviations and acronyms:

	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	EC50: Environmental Concentration associated with a response by 50% of the test population.
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
	LD50: Lethal Dose for 50% of the test population
	OSHA: Occupational Safety & Health Administration
	STEL: Short Term Exposure Limits
	TSCA: Toxic Substances Control Act
	TWA: Time Weighted Average

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



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AchievAL EnviroSyn AW Fluids

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 03/25/2012 Revision date: 04/21/2015 Version: 2.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : AchievAL EnviroSyn AW Fluids

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Lubricant

1.3. Details of the supplier of the safety data sheet

KOST USA, Inc.
1000 Tennessee Ave.
Cincinnati, 45229 - USA
T 1-800-661-9391 - F 1-513-492-5555
sales@kostusa.com - www.kostusa.com

1.4. Emergency telephone number

Emergency number : 1-800-424-9300
CHEMTREC (24 HOURS)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Distillates (petroleum), solvent-dewaxed heavy paraffinic	(CAS No) 64742-65-0	0 – 20	Acute Tox. 4 (Inhalation:dust,mist), H332 Asp. Tox. 1, H304 (DMSO <3%)
4,4' Methylene Bis (Dibutyldithiocarbamate)	(CAS No) 10254-57-6	1 – 2	Aquatic Chronic 2, H411

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Gently wash with plenty of soap and water.

First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.

First-aid measures after ingestion : Do NOT induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Repeated or prolonged contact may cause slight irritation to the skin.

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

Symptoms/injuries after ingestion : Diarrhea. Abdominal cramps.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry chemical. alcohol resistant foam.

Unsuitable extinguishing media : Water.

5.2. Special hazards arising from the substance or mixture

Fire hazard : No particular fire or explosion hazard.

Reactivity : No dangerous reactions known.

5.3. Advice for firefighters

Firefighting instructions : Do not allow run-off from fire fighting to enter drains or water courses.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with skin and eyes. Danger of slipping on leaked or spilled product.

6.1.1. For non-emergency personnel

Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Do not allow minor leaks or spills to accumulate on walking surfaces. Stop the flow of material, if this is without risk. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Take up in non-combustible absorbent material and shove into container for disposal.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do NOT taste or swallow.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Do not store near food, foodstuffs, drugs, or potable water supplies.

Incompatible products : Strong acids. Strong oxidizers.

Heat and ignition sources : Keep away from heat, sparks and flame.

Prohibitions on mixed storage : Incompatible materials.

Storage area : Store in dry, cool, well-ventilated area.

7.3. Specific end use(s)

Lubricant.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

AchievAL EnviroSyn AW Fluids	
ACGIH	Not applicable
OSHA	Not applicable

4,4' Methylene Bis (Dibutyldithiocarbamate) (10254-57-6)	
ACGIH	Not applicable
OSHA	Not applicable

Distillates (petroleum), solvent-dewaxed heavy paraffinic (64742-65-0)		
ACGIH	ACGIH TWA (mg/m³)	5
OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³

8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Use rubber gloves. PVC. neoprene gloves. nitrile rubber gloves.

Eye protection : In case of splashing or aerosol production: protective goggles.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use an approved respirator equipped with oil/mist cartridges.

Other information : Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : pale

Odour : mild ester

Odour threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : > 260 °C

Flash point : 260 °C

Auto-ignition temperature : > 320 °C

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapour pressure : < 0.1 mm Hg @ 37.8 °C

Relative vapour density at 20 °C : No data available

Relative density : 0.9 - 0.93 @ 15.6 °C

Solubility : insoluble in water.

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : 68 cSt @ 40 °C (AW 68)

Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidising properties : No data available

Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

Strong acids. Strong oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition generates : Aldehydes. Carbon oxides (CO, CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

4,4' Methylene Bis (Dibutyldithiocarbamate) (10254-57-6)	
LD50 oral rat	> 16000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

Distillates (petroleum), solvent-dewaxed heavy paraffinic (64742-65-0)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	2.18 mg/l
ATE US (vapours)	2.180 mg/l/4h
ATE US (dust,mist)	2.180 mg/l/4h

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified.

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Repeated or prolonged contact may cause slight irritation to the skin.

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

Symptoms/injuries after ingestion : Diarrhea. Abdominal cramps.

Likely routes of exposure : Skin and eye contact;Inhalation

SECTION 12: Ecological information

12.1. Toxicity

4,4' Methylene Bis (Dibutyldithiocarbamate) (10254-57-6)	
LC50 fish 1	> 0.06 mg/l no mortality
EC50 Daphnia 1	> 0.052 mg/l no mortality
NOEC (acute)	0.0325 mg/l algae 72 hour
NOEC chronic crustacea	>= 0.247 mg/l Daphnia 21 day

12.2. Persistence and degradability

AchievAL EnviroSyn AW Fluids	
Persistence and degradability	Not readily biodegradable.

4,4' Methylene Bis (Dibutyldithiocarbamate) (10254-57-6)	
Persistence and degradability	Not rapidly degradable.
Biodegradation	21 % 28 days

Distillates (petroleum), solvent-dewaxed heavy paraffinic (64742-65-0)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

AchievAL EnviroSyn AW Fluids	
Bioaccumulative potential	May bioaccumulate.

4,4' Methylene Bis (Dibutyldithiocarbamate) (10254-57-6)	
Log Pow	8.42

Distillates (petroleum), solvent-dewaxed heavy paraffinic (64742-65-0)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment. Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

SECTION 14: Transport information

In accordance with DOT

Not considered a dangerous good for transport regulations

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Distillates (petroleum), solvent-dewaxed heavy paraffinic (64742-65-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

4,4' Methylene Bis (Dibutyldithiocarbamate) (10254-57-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Distillates (petroleum), solvent-dewaxed heavy paraffinic (64742-65-0)
Listed on the Canadian DSL (Domestic Substances List) inventory.

4,4' Methylene Bis (Dibutyldithiocarbamate) (10254-57-6)
Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

4,4' Methylene Bis (Dibutyldithiocarbamate) (10254-57-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Distillates (petroleum), solvent-dewaxed heavy paraffinic (64742-65-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Indication of changes : Revised format.

Revision date : 04/21/2015

Data sources : ESIS (European chemincal Substances Information System; accessed at: http://esis.jrc.ec.europa.eu/index.php?PGM=cla. ACGIH 2000.

European Chemicals Agency (ECHA) Registered Substances list. Accessed at http://echa.europa.eu/.

Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html.

Abbreviations and acronyms : ACGIH (American Conference of Governement Industrial Hygienists).

ATE: Acute Toxicity Estimate.

CAS (Chemical Abstracts Service) number.

CLP: Classification, Labelling, Packaging.

EC50: Environmental Concentration associated with a response by 50% of the test population.

GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).

LD50: Lethal Dose for 50% of the test population.

OSHA: Occupational Safety & Health Administration.

STEL: Short Term Exposure Limits.

TSCA: Toxic Substances Control Act.

TWA: Time Weight Average.

Other information : None.

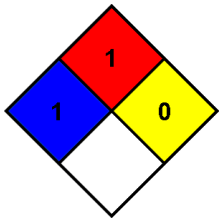
Full text of H-phrases:

Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
H304	May be fatal if swallowed and enters airways
H332	Harmful if inhaled
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



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