

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name MIRAPOL A 15

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance / Mixture**

- Surfactants used in cosmetics

1.3 Details of the supplier of the safety data sheet**Company**

Solvay USA Inc.,
NOVECARE
504 Carnegie Center
Princeton, NJ, 08540, US
Telephone Number: 800-973-7873

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture**HCS 2012 (29 CFR 1910.1200)**

- Not a hazardous product according to Globally harmonized System (GHS)

2.2 Label elements**HCS 2012 (29 CFR 1910.1200)**

- Not a hazardous product according to Globally harmonized System (GHS)

2.3 Other hazards which do not result in classification

- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long lasting effects.
- Slightly irritating to the skin.
- Does NOT present any particular fire hazard.
- On combustion, toxic gases are released.
- (following evaporation of water)
- Hazardous reactions may occur on contact with certain chemicals. (Refer to the list of incompatible materials section 10: "Stability-Reactivity").

SECTION 3: Composition/information on ingredients**3.1 Substance**

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- Not applicable, this product is a mixture.

3.2 Mixture

- Chemical nature Aqueous solution
Polyquaternium-2

Hazardous Ingredients and Impurities

- No ingredients are hazardous.

Non Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
Polyquaternium 2	68555-36-2	> 62
Water	7732-18-5	< 38

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

- Show this material safety data sheet to the doctor in attendance.
- First responder needs to protect himself.
- Place affected apparel in a sealed bag for subsequent decontamination.

In case of inhalation

- Negligible or unlikely exposure pathways
- Move to fresh air in case of accidental inhalation of vapors.

In case of skin contact

- In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Seek medical advice.
- Wash contaminated clothing before re-use.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- If eye irritation persists, consult a physician.

In case of ingestion

- Do not induce vomiting without medical advice.
- If victim is conscious:
- Rinse mouth with water.
- Keep at rest.
- Do not give anything to drink.
- Do not leave the victim unattended.
- Vomiting may occur spontaneously
- Risk of product entering the lungs on vomiting after ingestion.
- Lay victim on side.
- Seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Effects

- Skin contact may aggravate existing skin disease
- Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis

4.3 Indication of any immediate medical attention and special treatment needed**Notes to physician**

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
- Treat symptomatically.
- There is no specific antidote available.

SECTION 5: Firefighting measures**Flash point**

> 200 °F (> 93 °C)
closed cup

Flammability class: Will burn

Autoignition temperature

no data available

Flammability / Explosive limit

no data available

5.1 Extinguishing media**Suitable extinguishing media**

- Extinguishing media - small fires
- Dry chemical
- Carbon dioxide (CO₂)
- Extinguishing media - large fires
- Foam
- Water spray

Unsuitable extinguishing media

- High volume water jet
- (frothing possible)

5.2 Special hazards arising from the substance or mixture**Specific hazards during fire fighting**

- Under fire conditions:
- Will burn
- (following evaporation of water)
- Container may rupture on heating.
- Hazardous decomposition products formed under fire conditions.

Hazardous combustion products:

- On combustion or on thermal decomposition (pyrolysis), releases:
- Hydrogen chloride
- Nitrogen oxides (NO_x)
- Carbon oxides

5.3 Advice for firefighters

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Special protective equipment for fire-fighters

- Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

Specific fire fighting methods

- Do not use a solid water stream as it may scatter and spread fire.

Further information

- Standard procedure for chemical fires.
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Wear suitable protective equipment.
- For further information refer to section 8 "Exposure controls / personal protection."

6.2 Environmental precautions

- Stop the leak. Turn leaking containers leak-side up to prevent the escape of liquid.
- Contain the spilled material by diking.
- Do not flush into surface water or sanitary sewer system.
- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
- Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up***Methods for containment***

- Dam up with sand or inert earth (do not use combustible materials).
- Stop the leak. Turn leaking containers leak-side up to prevent the escape of liquid.

Recovery

- Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
- Shovel or sweep up.
- Keep in suitable, closed containers for disposal.
- Never return spills in original containers for re-use.

Decontamination / cleaning

- Wash off with plenty of water.
- Clean contaminated surface thoroughly.
- Recover the cleaning water for subsequent disposal.
- Decontaminate tools, equipment and personal protective equipment in a segregated area.

Disposal

- Dispose of in accordance with local regulations.

Additional advice

- Material can create slippery conditions.

6.4 Reference to other sections

- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 13. DISPOSAL CONSIDERATIONS

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

- Handle in accordance with good industrial hygiene and safety practice.
- Avoid inhalation of vapor or mist.
- Avoid contact with skin and eyes.
- Freezing will affect the physical condition but will not damage the material. Thaw and mix before using.
- To safely melt this material, use low pressure steam or place in a heated room
- Avoid localized overheating.
- Vent drums while heating

Hygiene measures

- The user is responsible for monitoring the working environment in accordance with local laws and regulations.
- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
 - 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
 - 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
 - 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
- Stable under normal conditions.
- Keep container tightly closed in a dry and well-ventilated place.
- Keep container tightly closed.
- Keep away from open flames, hot surfaces and sources of ignition.
- Keep away from incompatible materials to be indicated by the manufacturer
- Keep away from: Hazardous reactions may occur on contact with certain chemicals. (Refer to the list of incompatible materials section 10: "Stability-Reactivity").

Packaging material**Suitable material**

- Coated steels.
- Plastic materials.

Requirements for storage rooms and vessels

Recommended storage temperature: 39 - 120 °F (4 - 49 °C)

7.3 Specific end use(s)

- no data available

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

- Contains no substances with occupational exposure limit values.

8.2 Exposure controls**Control measures****Engineering measures**

- Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures :
- Effective exhaust ventilation system

Individual protection measures**Respiratory protection**

- When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.
- No personal respiratory protective equipment normally required.

Hand protection

- Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Recommended preventive skin protection
- Gloves

Eye protection

- Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.
- Eye contact should be prevented through the use of:
- Safety glasses with side-shields

Skin and body protection

- Recommended preventive skin protection
- Footwear protecting against chemicals
- Impervious clothing

Hygiene measures

- The user is responsible for monitoring the working environment in accordance with local laws and regulations.
- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

Protective measures

- Ensure that eyewash stations and safety showers are close to the workstation location.
- Emergency equipment immediately accessible, with instructions for use.
- Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.
- The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties**Appearance**

Form: viscous
Physical state: liquid
Color: colorless
 to
 amber
 cloudy

Odor

slight amine

Odor Threshold

no data available

pH

7.5 - 8.5 (10 % (m/v))
 Aqueous solution

Melting point/freezing point

Congeaing point: 32 °F (0 °C)

Initial boiling point and boiling range

ca. Boiling point/boiling range: 221 °F (105 °C)

Flash point

> 200 °F (> 93 °C) closed cup

Flammability class: Will burn

Evaporation rate (Butylacetate = 1)

no data available

Flammability (solid, gas)

no data available

Flammability (liquids)

no data available

Flammability / Explosive limit

no data available

Autoignition temperature

no data available

Vapor pressure

no data available

Vapor density

no data available

<u>Density</u>	1.137 g/cm3 (68 °F (20 °C))
<u>Relative density</u>	no data available
<u>Solubility</u>	<u>Water solubility:</u> soluble <u>Solubility in other solvents:</u> water miscible solvents : soluble common organic solvents : insoluble common organic solvents : partly soluble
<u>Partition coefficient: n-octanol/water</u>	no data available
<u>Decomposition temperature</u>	no data available
<u>Viscosity</u>	<u>Viscosity, dynamic :</u> < 3,000 mPa.s (68 °F (20 °C))
<u>Explosive properties</u>	no data available
<u>Oxidizing properties</u>	No information available.

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

- no data available

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Polymerization

- Hazardous polymerization does not occur.

10.4 Conditions to avoid

- Keep away from heat and sources of ignition.
- Keep away from flames and sparks.

10.5 Incompatible materials

- Strong oxidizing agents
- Strong acids
- Strong bases
- Strong reducing agents.

10.6 Hazardous decomposition products

- On combustion or on thermal decomposition (following the evaporation of water) releases:
- Hydrogen chloride
- Nitrogen oxides (NO_x)
- (Carbon oxides (CO + CO₂)).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

Polyquaternium 2

LD50 : > 3,100 mg/kg - Mouse
The product has a low acute toxicity
Unpublished internal reports

Acute inhalation toxicity

no data available

Acute dermal toxicity

no data available

Acute toxicity (other routes of administration)

no data available

Skin corrosion/irritation

Slightly irritating to rabbits on cutaneous application.
Diluted product
Unpublished internal reports

undiluted product
No information available.

Serious eye damage/eye irritation

Not irritating to rabbits on ocular application.
Diluted product
Unpublished internal reports

undiluted product
No information available.

Respiratory or skin sensitization

Polyquaternium 2

Maximization Test - Guinea pig
Does not cause skin sensitization.
Method: OECD Test Guideline 406
Unpublished internal reports

Mutagenicity**Genotoxicity in vitro**

Polyquaternium 2

Ames test
with and without metabolic activationnegative
Method: OECD Test Guideline 471
Unpublished internal reports**Genotoxicity in vivo**

no data available

Carcinogenicity

no data available

This product does not contain any ingredient designated as probable or suspected human carcinogens by:

NTP
IARC
OSHA
ACGIH

Toxicity for reproduction and development**Toxicity to reproduction / fertility**

no data available

Developmental Toxicity/Teratogenicity

no data available

STOT**STOT-single exposure**

Polyquaternium 2

Routes of exposure: Ingestion
The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.
internal evaluation**STOT-repeated exposure**

no data available

Aspiration toxicity

no data available

SECTION 12: Ecological information**12.1 Toxicity****Aquatic Compartment****Acute toxicity to fish**

Polyquaternium 2

LC50 - 96 h : 0,081 parts per million - Oncorhynchus mykiss (rainbow trout)
semi-static test
Analytical monitoring: no

Method: according to a standardized method
Unpublished internal reports
Very toxic to fish.

Acute toxicity to daphnia and other aquatic invertebrates.

Polyquaternium 2

EC50 - 48 h : 0.083 mg/l - Daphnia magna (Water flea)
semi-static test
Analytical monitoring: no
Method: OECD Test Guideline 202
Unpublished internal reports
Very toxic to aquatic invertebrates.

Toxicity to aquatic plants

Polyquaternium 2

ErC50 - 72 h : 0.11 mg/l - Scenedesmus subspicatus
static test
Analytical monitoring: no
Method: OECD Test Guideline 201
Unpublished internal reports
Very toxic to algae.

NOEC - 72 h : 0.021 mg/l - Scenedesmus subspicatus
static test
Analytical monitoring: no
Method: OECD Test Guideline 201
Unpublished internal reports
Very toxic to algae with long lasting effects.

Toxicity to microorganisms

no data available

Chronic toxicity to fish

no data available

Chronic toxicity to daphnia and other aquatic invertebrates.

no data available

Chronic Toxicity to aquatic plants

no data available

M-Factor

Polyquaternium 2

Acute aquatic toxicity = 10
Chronic aquatic toxicity = 10
(according to the Globally Harmonized System (GHS))

12.2 Persistence and degradability**Abiotic degradation**

no data available

Physical- and photo-chemical elimination

no data available

Biodegradation**Biodegradability**

Polyquaternium 2

Ready biodegradability study:
Method: OECD Test Guideline 301 D
0 % - 28 Days
The substance does not fulfill the criteria for ready biodegradability and ultimate aerobic biodegradability
Theoretical oxygen demand
Inoculum: Microbial inoculum
Unpublished internal reports

Inherent biodegradability study
Method: OECD Test Guideline 302 B
55 % - 36 Days
The substance fulfills the criteria for inherent primary biodegradability
Dissolved organic carbon (DOC)
Inoculum: activated sludge
Unpublished internal reports

Degradability assessment

Polyquaternium 2

The product is not considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water no data available

Bioconcentration factor (BCF) Not bioaccumulable.
internal evaluation

12.4 Mobility in soil

Adsorption potential (Koc) Product adsorbs onto suspended material and dissolved organic material.
internal evaluation

Known distribution to environmental compartments

Ultimate destination of the product: Water

Ultimate destination of the product: Sediment

12.5 Results of PBT and vPvB assessment no data available**12.6 Other adverse effects** no data available**Ecotoxicity assessment****Acute aquatic toxicity**

According to the data on the components
Very toxic to aquatic life.
According to the classification criteria for mixtures.

Chronic aquatic toxicity

According to the data on the components
Very toxic to aquatic life with long lasting effects.
According to the classification criteria for mixtures.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product Disposal**

- Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Waste Code

- Environmental Protection Agency
- Hazardous Waste – NO

Advice on cleaning and disposal of packaging

- Rinse with an appropriate solvent.
- Dispose of contents/container in accordance with local regulation.

SECTION 14: Transport information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification. The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

DOT**14.1 UN number**

UN 3082

14.2 Proper shipping nameENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Polyquaternium-2)**14.3 Transport hazard class**

9

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Label(s) 9

14.4 Packing groupPacking group III
ERG No 171**14.5 Environmental hazards**

Marine pollutant YES

TDG**14.1 UN number** UN 3082**14.2 Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Polyquaternium-2)**14.3 Transport hazard class**9
Label(s) 9**14.4 Packing group**Packing group III
ERG No 171**14.5 Environmental hazards**

Marine pollutant YES

NOM**14.1 UN number** UN 3082**14.2 Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Polyquaternium-2)**14.3 Transport hazard class**9
Label(s) 9**14.4 Packing group**Packing group III
ERG No 171**14.5 Environmental hazards**

Marine pollutant YES

IMDG**14.1 UN number** UN 3082**14.2 Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Polyquaternium-2)
IMDG Code segregation group Ammonium Compounds**14.3 Transport hazard class**9
Label(s) 9**14.4 Packing group**

Packing group III

14.5 Environmental hazards

YES

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Marine pollutant**14.6 Special precautions for user**

EmS F-A , S-F

For personal protection see section 8.

IATA**14.1 UN number** UN 3082**14.2 Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Polyquaternium-2)**14.3 Transport hazard class** 9
Label(s): 9**14.4 Packing group**
Packing group IIIPacking instruction (cargo aircraft) 964
Max net qty / pkg 450.00 L
Packing instruction (passenger aircraft) 964
Max net qty / pkg 450.00 L**14.5 Environmental hazards** YES**14.6 Special precautions for user**

For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information**15.1 Notification status**

Inventory Information	Status
United States TSCA Inventory	- On TSCA Inventory
Canadian Domestic Substances List (DSL)	- All components of this product are on the Canadian DSL
Australia Inventory of Chemical Substances (AICS)	- On the inventory, or in compliance with the inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- On the inventory, or in compliance with the inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- On the inventory, or in compliance with the inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- On the inventory, or in compliance with the inventory

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15.2 Federal Regulations

US. EPA EPCRA SARA Title III**SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370)**

Fire Hazard	no
Reactivity Hazard	no
Sudden Release of Pressure Hazard	no
Acute Health Hazard	no
Chronic Health Hazard	no

Section 313 Toxic Chemicals (40 CFR 372.65)

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.

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)

Ingredients	CAS-No.	Reportable quantity
Ethane, 1,1'-oxybis[2-chloro-	111-44-4	10 lb

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)

Ingredients	CAS-No.	Reportable quantity
Ethane, 1,1'-oxybis[2-chloro-	111-44-4	10 lb

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

Ingredients	CAS-No.	Reportable quantity
Acetic acid	64-19-7	5000 lb
Ethane, 1,1'-oxybis[2-chloro-	111-44-4	10 lb
1,4-Dioxane	123-91-1	100 lb

15.3 State Regulations

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

WARNING! This product contains a chemical known in the State of California to cause cancer.

Ingredients	CAS-No.
1,4-Dioxane	123-91-1
Ethane, 1,1'-oxybis[2-chloro-	111-44-4

SECTION 16: Other information**NFPA (National Fire Protection Association) - Classification**

Health	1 slight
Flammability	1 slight
Instability or Reactivity	0 minimal

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HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

Health	1 slight
Flammability	1 slight
Reactivity	0 minimal
PPE	Determined by User; dependent on local conditions

Further information

- Product evaluated under the US GHS format.

Date Prepared: 05/31/2016

- | | |
|---------|---|
| - ACGIH | American Conference of Governmental Industrial Hygienists |
| - OSHA | Occupational Safety and Health Administration |
| - NTP | National Toxicology Program |
| - IARC | International Agency for Research on Cancer |
| - NIOSH | National Institute for Occupational Safety and Health |

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.