

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

1.1 Product identifier

- Trade name PEG 400

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

Uses of the Substance / Mixture

- Surfactant

1.3 Details of the supplier of the safety data sheet

Distributor

Silver Fern Chemical, Inc.
2226 Queen Anne Avenue North, Suite C
Seattle WA 98109, USA
Phone: 1-866-282-3384

Business Contact

Customer Service: 1-866-282-3384
info@silverfernchemical.com

1.4 Emergency phone number

24 Hour Emergency Contact

Infotrac 1-800-535-5053 (USA & Canada)
Outside USA & Canada 1-352-323-3500

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

Specific target organ systemic toxicity - single exposure, Category 3

H335: May cause respiratory irritation. (Respiratory system)

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram



Signal Word

- Warning

Hazard Statements

- H335 May cause respiratory irritation.

Precautionary Statements

Prevention

- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
- P271 Use only outdoors or in a well-ventilated area.

Response

- P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a

POISON CENTER/doctor if you feel unwell.

Storage

- P403 + P233
- P405

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal

- P501

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

2.3 Other hazards which do not result in classification

None identified

SECTION 3: Composition/information on ingredients**3.1 Substance****Hazardous Ingredients and Impurities**

Chemical name	Identification number CAS-No.	Concentration [%]
Polyethylene Glycol	25322-68-3	>= 99 - <= 100

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

3.2 Mixture

Not applicable, this product is a substance.

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

- Move to fresh air in case of accidental inhalation of vapors.
- Consult a physician if necessary.

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.
- Call a physician if irritation develops or persists.
- Wash contaminated clothing before reuse.

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

- Treat symptomatically.
- There is no specific antidote available.
- 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.

SECTION 5: Firefighting measures

<u>Flash point</u>	390.0 °F (198.9 °C) Method: closed cup
	Flammability class: Will burn
<u>Autoignition temperature</u>	no data available
<u>Flammability / Explosive limit</u>	no data available

5.1 Extinguishing media

Suitable extinguishing media

- Water spray
- Foam
- Carbon dioxide (CO₂)
- Multipurpose powders

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

Hazardous combustion products:

- On combustion or on thermal decomposition (pyrolysis), releases:
- Carbon oxides

5.3 Advice for firefighters

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

- Stop leak if safe to do so.

Recovery

- Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
- Shovel or sweep up.
- Never return spills in original containers for re-use.
- Keep in properly labeled containers.
- Keep in suitable, closed containers for disposal.

Decontamination / cleaning

- Wash nonrecoverable remainder with large amounts 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**

- Ethylene oxide may collect in container head space.
- Provide adequate ventilation.
- 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.
- Avoid localized overheating.
- Vent drums while heating
- Mix thoroughly before use.

Hygiene measures

- 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.
- The user is responsible for monitoring the working environment in accordance with local laws and regulations.

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 in a dry, cool 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").

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

Components with workplace occupational exposure limits

Ingredients	Value type	Value	Basis
Polyethylene Glycol	WEEL	10 mg/m ³	American Industrial Hygiene Association
	Form of exposure : aerosol		

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.
- Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate local standard(s):
- Respirator with filter for organic vapor

Hand protection

- Recommended preventive skin protection
- Gloves
- 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.

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

- 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.

- The user is responsible for monitoring the working environment in accordance with local laws and regulations.

Protective measures

- The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment.
- 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.

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

<u>Appearance</u>	Form: clear Physical state: liquid Color: colorless
<u>Odor</u>	Alcohol
<u>Odor Threshold</u>	no data available
<u>pH</u>	6.0
<u>Melting point/freezing point</u>	Melting point/range: 39 - 46 °F (4 - 8 °C)
<u>Initial boiling point and boiling range</u>	no data available
<u>Flash point</u>	390.0 °F (198.9 °C) Method: closed cup Flammability class: Will burn
<u>Evaporation rate (Butylacetate = 1)</u>	no data available
<u>Flammability (solid, gas)</u>	no data available
<u>Flammability (liquids)</u>	no data available
<u>Flammability / Explosive limit</u>	no data available
<u>Autoignition temperature</u>	no data available
<u>Vapor pressure</u>	no data available
<u>Vapor density</u>	no data available
<u>Density</u>	
<u>Relative density</u>	1.13

<u>Solubility</u>	<u>Water solubility:</u> soluble
<u>Partition coefficient: n-octanol/water</u>	no data available
<u>Decomposition temperature</u>	no data available
<u>Viscosity</u>	<u>Viscosity, kinematic</u> : 88 mm ² /s (77 °F (25 °C))
<u>Explosive properties</u>	no data available
<u>Oxidizing properties</u>	no data 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

10.6 Hazardous decomposition products

- On combustion or on thermal decomposition (pyrolysis), releases:
- (Carbon oxides (CO + CO₂)).

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity**

Polyethylene Glycol

LD50 Oral : > 14,000 mg/kg

Unpublished reports

Published data

Acute inhalation toxicity

no data available

Acute dermal toxicity Polyethylene Glycol	LD50 Dermal : > 20,000 mg/kg - Rabbit Unpublished reports
Acute toxicity (other routes of administration)	no data available
<u>Skin corrosion/irritation</u> Polyethylene Glycol	Not classified as irritating to skin
<u>Serious eye damage/eye irritation</u> Polyethylene Glycol	Not classified as irritating to eyes
<u>Respiratory or skin sensitization</u> Polyethylene Glycol	Does not cause skin sensitization. Structure-activity relationship (SAR)
<u>Mutagenicity</u> Genotoxicity in vitro Polyethylene Glycol	Ames test with and without metabolic activation negative Method: according to a standardized method Published data Chromosome aberration test in vitro Strain: Chinese hamster lung cells without metabolic activation negative Structure-activity relationship (SAR)
Genotoxicity in vivo	no data available
<u>Carcinogenicity</u>	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**

Polyethylene Glycol

Fertility study 3 generations - Rat , male and female

Oral

NOAEL parent: 60 mg/kg

Published data

Conclusion is not possible due to incomplete or heterogeneous data.

Developmental Toxicity/Teratogenicity

Polyethylene Glycol

Mouse , female

Application Route: Oral

LOAEL teratogenicity: 500 mg/kg

Published data

Conclusion is not possible due to incomplete or heterogeneous data.

Rat , female

Application Route: Oral

NOAEL teratogenicity: 1,500 - 5,000 mg/kg

Published data

Conclusion is not possible due to incomplete or heterogeneous data.

STOT**STOT-single exposure**

Polyethylene Glycol

Routes of exposure: Inhalation

The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation according to GHS criteria. internal evaluation

STOT-repeated exposure

Polyethylene Glycol

Routes of exposure: Ingestion

The substance or mixture is not classified as specific target organ toxicant, repeated exposure according to GHS criteria. internal evaluation

Polyethylene Glycol

Oral 13 weeks - Rat , male and female

NOAEL: 1100 mg/kg

Published data

Not considered to cause serious damage to health on repeated exposure

Inhalation 2 Weeks - Rat

LOAEC: 567 mg/m³

Target Organs: Lungs

Published data

May cause respiratory irritation.

Aspiration toxicity

no data available

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

Polyethylene Glycol

LC50 - 96 h : > 100 mg/l - Poecilia reticulata (guppy)
static test

Method: OECD Test Guideline 203

Unpublished reports

Not harmful to fish (LC/LL50 > 100 mg/L)

Acute toxicity to daphnia and other aquatic invertebrates.

no data available

Toxicity to aquatic plants

no data available

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

12.2 Persistence and degradability**Abiotic degradation**

no data available

Physical- and photo-chemical elimination

no data available

Biodegradation**Biodegradability**

Polyethylene Glycol

Ready biodegradability study:

74.9 % - 28 Days

The substance fulfills the criteria for ultimate aerobic biodegradability and ready biodegradability

Theoretical oxygen demand

Inoculum: activated sludge

Structure-activity relationship (SAR)

Degradability assessment

Polyethylene Glycol

The product is considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential**Partition coefficient: n-octanol/water** no data available**Bioconcentration factor (BCF)**

Polyethylene Glycol

Species: Fish

Bioconcentration factor (BCF): 3.2

Structure-activity relationship (SAR)

Not potentially bioaccumulable

12.4 Mobility in soil**Adsorption potential (Koc)**

Polyethylene Glycol

Adsorption/Soil

Koc: 10

Structure-activity relationship (SAR)

Known distribution to environmental compartments no data available**12.5 Results of PBT and vPvB assessment**

Polyethylene Glycol

This substance is not considered to be persistent, bioaccumulating, and toxic (PBT).

This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

no data available

Ecotoxicity assessment**Acute aquatic toxicity**

Polyethylene Glycol

Not harmful to aquatic life (LC/LL50, EC/EL50 > 100 mg/L)

Chronic aquatic toxicity

Polyethylene Glycol

No adverse chronic effect observed up to and including the threshold of 1 mg / L.

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 in accordance with local regulations.

SECTION 14: Transport information**DOT**

not regulated

TDG

not regulated

NOM

not regulated

IMDG

not regulated

IATA

not regulated

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	- Listed on Inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory

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	yes
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)

This material does not contain any components with a SARA 302 RQ.

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

This material does not contain any components with a section 304 EHS RQ.

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

This material does not contain any components with a CERCLA RQ.

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.
Ethylene Oxide	75-21-8

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Ingredients	CAS-No.
Ethylene Oxide	75-21-8

SECTION 16: Other information

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

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

Date Prepared: 11/23/2016

Key or legend to abbreviations and acronyms used in the safety data sheet

- TWA	8-hr TWA
- 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

DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.

Revision Date: 11/23/2016

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Approved - TL 08 11 17