

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

- Trade name JAGUAR C 13 S SGI

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

- Thickener for cosmetic formulations

Remarks

- This product may rapidly contribute towards a highly hazardous environment within a confined space (e.g. Within ISO tanks, reactors, silos, etc.).
- Risk assessments should be conducted prior to handling this product / material

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

Solvay USA LLC.,
504 CARNEGIE CENTER PRINCETON NJ 08540, USA
Tel. : +1 609 860 4000

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): +1-800-424-9300 within the United States and Canada, or +1-703-527-3887 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)**

Combustible dust

May form combustible dust concentrations in air.

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

- Warning

Hazard Statements

- May form combustible dust concentrations in air.

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.
- Potential dust explosion hazard.
- Finely divided particles may form explosive mixtures in air.
- Dust suspended in air may ignite with static discharge, sparks or flame.
- Electrostatic charges may be generated as a result of flow, stirring etc.
- Electrostatic charges may build up by swirling, pneumatic transport, pouring etc.
- Exposure to dust generated during the handling or use of the product may cause temporary mechanical irritation to the eyes, skin and respiratory tract.

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

- Chemical nature Guar gum, 2 hydroxy-3-(trimethylammonium)propyl ether chloride

Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride	65497-29-2	>= 90 - < 95
2-Butenedioic acid (2E)-	110-17-8	>= 1 - < 5

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**

- First responder needs to protect himself.
- Rescuers should wear PPE during rescue and decontamination of victims.
- When symptoms persist or in all cases of doubt seek medical advice.

In case of inhalation

- Move to fresh air.
- Keep at rest.
- Consult a physician if necessary.

In case of skin contact

- Take off contaminated clothing and shoes immediately.
- Wash off immediately with soap and plenty of water.
- Use a mild soap if available.
- Get medical attention immediately if symptoms occur.

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.
- Rinse mouth with water.
- Do not give anything to drink.
- Keep at rest.
- Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

- no data available

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.

SECTION 5: Firefighting measures**Flash point**

> 200 °F (> 93 °C)
Seta closed cup

Flammability class: Will burn

Autoignition temperature

No data available

Flammability / Explosive limit

Lower flammability/explosion limit : Not applicable
Upper flammability/explosion limit : Not applicable

5.1 Extinguishing media**Suitable extinguishing media**

- Extinguishing media - small fires
- Multipurpose powders
- Water mist
- Alcohol-Resistant Fluorine Free Foams
- Extinguishing media - large fires
- Water mist
- Alcohol-Resistant Fluorine Free Foams

Unsuitable extinguishing media

- Do not use a solid water stream as it may scatter and spread fire.
- High pressure inert gas, e.g. carbon dioxide jet.
- (Avoid dispersal of dust in the air)

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

- Risk of dust explosion.
- Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
- The pressure in sealed containers can increase under the influence of heat.

- Hazardous decomposition products formed under fire conditions.
- High concentrations of toxic or harmful products may remain in the residual liquid once the fire has been extinguished.

Hazardous combustion products:

- Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
- Nitrogen oxides (NOx)
- Chlorinated compounds

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.
- Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Specific fire fighting methods

- Stay upwind.
- Fight fire remotely due to the risk of explosion.
- Do not use a solid water stream as it may scatter and spread fire.
- Cool down the containers / equipment exposed to heat with a water spray. Ensure that there is NO direct contact between the water and the product.
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information

- Evacuate personnel to safe areas.
- Avoid dust formation.
- Intervention only by capable personnel who are trained and aware of the hazards of the product.
- Never approach containers which have been exposed to fire, without cooling them sufficiently.
- 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**

- Avoid inhalation, ingestion and contact with skin and eyes.
- Wear chemical resistant personal protective equipment
- Wear suitable gloves.
- Wear suitable protective clothing.
- Wear respiratory protection.
- Wear as appropriate:
 - Faceshield or an appropriate full face protection.
 - Tightly fitting safety goggles
 - Complete suit protecting against chemicals
- In the case of dust or aerosol formation use respirator with an approved filter.
- In the case of vapor formation use a respirator with an approved filter.

- Eliminate all ignition sources if safe to do so.
- Stop leak if safe to do so.
- If spillage occurs on the public highway, indicate the danger and notify the authorities (police, fire service).
- Isolate spill or leak area in a radius of at least 50 meters.
- For further information refer to section 8 "Exposure controls / personal protection."

6.2 Environmental precautions

- Prevent further leakage or spillage if safe to do so.
- Contain the spilled material by diking.
- The product should not be allowed to enter drains, water courses or the soil.
- 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

- No sparking tools should be used.
- Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
- Stop leak if safe to do so.
- Dam up with sand or inert earth (do not use combustible materials).
- Shovel or sweep up.
- Keep in suitable, closed containers for disposal.
- Never return spills in original containers for re-use.
- 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.
- Dispose of in accordance with local regulations.

Additional advice

- No conditions to be specially mentioned.

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.
- Risk assessments, along with appropriate identification and implementation of the corresponding risk controls, are to be conducted by competent person(s) on the intended work processes involving this product.
- This product may rapidly contribute towards a highly hazardous environment within a confined space (e.g. Within ISO tanks, reactors, silos, etc.).

- The product must only be handled by specifically trained employees.
- Provide sufficient air exchange and/or exhaust in work rooms.
- Vapor extraction at source
- Do not use in areas without adequate ventilation.
- Extracted air must not be allowed to return to the workplace.
- The product should only be used in areas from which all naked lights and other sources of ignition have been excluded.
- Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- Take precautionary measures against static discharges.
- Ground/bond container and receiving equipment.
- Ensure all equipment is electrically grounded before beginning transfer operations.
- Use only non-sparking tools.
- Advice on safe handling
- Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
- Provide for appropriate exhaust ventilation and dust collection at machinery.
- Dust must be extracted directly at the point of origin.
- Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).
- Wear personal protective equipment.
- Wear suitable protective clothing.
- May cause mechanical irritation of the eyes, skin, nose and throat.
- For personal protection see section 8.

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.
- The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.
- Air sampling and / or biological monitoring of the substances shown in Section 8.1 are to be conducted using methods accepted by local competent authorities responsible for workplace safety and health.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Take appropriate measures to prevent static discharges, which may include thorough electrical interconnecting, grounding of equipment, and/or conveyance under inert gas.
- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
- Keep in a contained area
- The floor of the storage area should be impermeable and designed to form a water-tight basin.
- Keep locked up or in an area accessible only to qualified or authorized persons.
- Keep containers tightly closed in a dry, cool and well-ventilated place.
- 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**

- Plastic materials.
- Coated steels.
- Stainless steel
- Water resistant materials.

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**

Components	Value type	Value	Basis
Particulates not otherwise regulated	PEL	15 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Form of exposure : Total dust		
Particulates not otherwise regulated	PEL	5 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Form of exposure : Respirable fraction		

8.2 Exposure controls

Control measures

Engineering measures

- Risk assessments, along with appropriate identification and implementation of the corresponding risk controls, are to be conducted by competent person(s) on the intended work processes involving this product.
- 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 :
 - Facilities and equipment easily cleanable.
 - Effective exhaust ventilation system
 - Extract at emission point.
 - Ensure adequate ventilation.
 - Ensure that extracted air cannot be returned to the workplace through the ventilation system.
- Dust must be extracted directly at the point of origin.
- Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

Individual protection measures

Respiratory protection

- Recommended Filter type: Particulates type
- This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation.
- 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.
- Respirator must be worn if exposed to dust.

Hand protection

- Where there is a risk of contact with hands, use appropriate gloves
- Gloves must be inspected prior to use.
- 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.
- Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Suitable material

- Nitrile rubber
- Neoprene
- butyl-rubber
- PVC

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:
 - Tightly fitting safety goggles

- Faceshield or an appropriate full face protection.

Skin and body protection

- Wear fire resistant and antistatic coveralls
- Workers should wear antistatic footwear.
- Lightweight protective clothing
- Footwear protecting against chemicals
- Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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.
- The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.
- Air sampling and / or biological monitoring of the substances shown in Section 8.1 are to be conducted using methods accepted by local competent authorities responsible for workplace safety and health.

Protective measures

- Emergency equipment immediately accessible, with instructions for use.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- 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 regulations 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

<u>Physical state</u>	solid
<u>Form</u>	Fine powder
<u>Color</u>	creamy-white.
<u>Odor</u>	bean like
<u>Odor Threshold</u>	No data available
<u>Melting point/freezing point</u>	<u>Melting point/range:</u> 356 °F (180 °C) Decomposition: yes

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<u>Initial boiling point and boiling range</u>	No data available
<u>Flammability (solid, gas)</u>	May form combustible dust concentrations in air.
<u>Flammability (liquids)</u>	No data available
<u>Flammability / Explosive limit</u>	<u>Lower flammability/explosion limit:</u> Not applicable <u>Upper flammability/explosion limit:</u> Not applicable
<u>Flash point</u>	> 200 °F (> 93 °C) Seta closed cup Flammability class: Will burn
<u>Autoignition temperature</u>	No data available
<u>Decomposition temperature</u>	No data available
<u>pH</u>	6.0 - 7.0 (1 %) Aqueous solution
<u>Viscosity</u>	No data available
<u>Solubility</u>	<u>Water solubility:</u> soluble <u>Solubility in other solvents:</u> nonpolar solvents: insoluble
<u>Partition coefficient: n-octanol/water</u>	No data available
<u>Vapor pressure</u>	No data available
<u>Density</u>	Not applicable <u>Bulk density:</u> ca. 750 kg/m3
<u>Relative density</u>	No data available
<u>Relative vapor density</u>	No data available
<u>Particle characteristics</u>	No data available
<u>Evaporation rate (Butylacetate = 1)</u>	No data available
9.2 Other information	
<u>Oxidizing properties</u>	Not considered as oxidizing., Structure-activity relationship (SAR)
<u>Dust deflagration index (Kst)</u>	105 m.bar/s
<u>Minimum ignition energy</u>	300 - 1,000 mJ
<u>Minimum ignition concentration</u>	30 g/m3
<u>Minimum ignition temperature</u>	716 °F (380 °C)
<u>Minimum ignition temperature—dust</u>	590 °F (310 °C)

layer

SECTION 10: Stability and reactivity

10.1 Reactivity

- Stable at normal ambient temperature and pressure.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- Under certain conditions, small dust-particles from the product may form flammable and explosive mixtures with the air.

10.4 Conditions to avoid

- Avoid dust formation.
- Prevent the build-up of electrostatic charge.
- Keep away from open flames, hot surfaces and sources of ignition.
- Avoid excessive heat for prolonged periods of time.

10.5 Incompatible materials

- Strong oxidizing agents.
- hot strong concentrated acids.
- Strong bases

10.6 Hazardous decomposition products

- Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
- Nitrogen oxides (NOx)
- Chlorinated compounds

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

Rat
Not classified as hazardous for acute oral toxicity according to GHS.
Expert judgment
Unpublished reports
Unpublished internal reports

Acute inhalation toxicity

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

Acute dermal toxicity

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

Acute toxicity (other routes of administration)

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Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

Skin corrosion/irritation

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

Rabbit
Not classified as irritating to skin
Method: Expert judgment
Unpublished internal reports

Serious eye damage/eye irritation

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

Rabbit
slight irritation
Method: Expert judgment
Unpublished internal reports
Product dust may be irritating to eyes, skin and respiratory system.

Respiratory or skin sensitization

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

Buehler Test - Guinea pig
Method: Expert judgment
Unpublished internal reports
The product is not considered to be sensitizing by skin contact.
Guar gum has been associated with cases of respiratory allergies in some susceptible individuals, as reported in the literature, or may exacerbate an existing allergic condition. However, no cases of respiratory sensitization have been observed with the manufacture or use of the derivatized guar.

Magnusson and Kligman method - Guinea pig
Method: Expert judgment
Unpublished internal reports
The product is not considered to be sensitizing by skin contact.
Guar gum has been associated with cases of respiratory allergies in some susceptible individuals, as reported in the literature, or may exacerbate an existing allergic condition. However, no cases of respiratory sensitization have been observed with the manufacture or use of the derivatized guar.

Mutagenicity**Genotoxicity in vitro**

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

Ames test
with and without metabolic activation
Method: Expert judgment
Unpublished internal reports
Product is not considered to be genotoxic

Genotoxicity in vivo

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

Carcinogenicity

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

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

NTP
IARC
OSHA

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

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

Developmental Toxicity/Teratogenicity

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

STOT**STOT-single exposure**

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

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

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

Experience with human exposure

No data available

Aspiration toxicity

No data available

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

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

LC50 - 96 h : 0.39 - 1.22 mg/l - Oncorhynchus mykiss (rainbow trout)
semi-static test

Method: according to a standardized method
Unpublished internal reports
Fresh water

LC50 - 96 h : 0.39 - 1.22 mg/l - Lepomis macrochirus (Bluegill sunfish)
static test

Unpublished internal reports
Fresh water

Very toxic to fish.

Acute toxicity to daphnia and other aquatic invertebrates

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

EC50 - 48 h : 100 mg/l - Daphnia magna (Water flea)
Method: according to a standardized method
Freshwater species
Unpublished internal reports
Harmful to aquatic invertebrates.

Toxicity to aquatic plants

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

Toxicity to microorganisms

No data available

Chronic toxicity to fish

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

Chronic toxicity to daphnia and other aquatic invertebrates

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

No data available

M-Factor

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

Acute aquatic toxicity = 1
 Chronic aquatic toxicity = 1
 (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**

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

Ready biodegradability study:
 Method: OECD Test Guideline 301
 < 60 % - 28 Days
 The substance does not fulfill the criteria for ready biodegradability and ultimate aerobic biodegradability
 Dissolved organic carbon (DOC)
 Inoculum: activated sludge
 Expert judgment and weight of evidence determination.
 Unpublished internal reports

Inherent biodegradability study
 Method: OECD Test Guideline 302 B
 < 70 % - 28 Days
 The substance fulfills the criteria for inherent primary biodegradability
 Inoculum: activated sludge
 Expert judgment and weight of evidence determination.
 Unpublished internal reports

Degradability assessment

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

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)

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Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

Not potentially bioaccumulable
Expert judgment

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

Product adsorbs onto suspended material and dissolved organic material.
Published data

Known distribution to environmental compartments

Ultimate destination of the product: Water

12.5 Results of PBT and vPvB assessment

Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride

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**Ozone-Depletion Potential**

Regulatory basis: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Regulatory list: ZUS_CAA_I
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Ecotoxicity assessment**Short-term (acute) aquatic hazard**

According to the available data on the constituents
Very toxic to aquatic life.

Lower toxicity to aquatic organisms is expected in the natural environment due to lower bioavailability (adsorption onto organic matter).

Long-term (chronic) aquatic hazard

According to the available data on the constituents
Very toxic to aquatic life with long lasting effects.

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

- Dispose of in accordance with local regulations.
- 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.

Prohibition

- Do not discharge directly into the environment.
- Do not dispose of with domestic refuse.

Waste Code

- Environmental Protection Agency
- Hazardous Waste – NO

Advice on cleaning and disposal of packaging

- Empty remaining contents.
- Clean using steam.
- Monitor the residual vapors.
- Dispose of rinse water in accordance with local and national regulations.
- Containers that cannot be cleaned must be treated as waste.
- Dispose of contents/ container to an approved waste disposal plant.
- Dispose of in accordance with local regulations.
- Where possible recycling is preferred to disposal or incineration.
- The recycled material must be completely dry and free of pollutants.

Prohibition

- Do NOT dispose of untreated packaging with industrial waste.
- Do not dispose of with domestic refuse.

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.

49 CFR

14.1 UN number	UN 3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride)
14.3 Transport hazard class	9
Label(s)	9
14.4 Packing group	
Packing group	III
ERG No	171
14.5 Environmental hazards	YES
Marine pollutant	Marine Pollutant

TDG

14.1 UN number	UN 3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride)

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14.3 Transport hazard class	9
Label(s)	9
14.4 Packing group	
Packing group	III
ERG No	171
14.5 Environmental hazards	YES
Marine pollutant	Marine Pollutant

NOM

14.1 UN number	UN 3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride)
14.3 Transport hazard class	9
Label(s)	9
14.4 Packing group	
Packing group	III
ERG No	171
14.5 Environmental hazards	YES
Marine pollutant	

IMDG

14.1 UN number	UN 3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride)
IMDG Code segregation group	Ammonium compounds (SGG2)
14.3 Transport hazard class	9
Label(s)	9
14.4 Packing group	
Packing group	III
14.5 Environmental hazards	YES
Marine pollutant	
14.6 Special precautions for user	
EmS	F-A , S-F

For personal protection see section 8.

14.7 Transport in bulk vessels according to IMO instruments
No data available

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IATA

14.1 UN number	UN 3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Guar gum, 2-hydroxy-3-(trimethylammonio)propyl ether, chloride)
14.3 Transport hazard class	9
Label(s):	9
14.4 Packing group	III
Packing instruction (cargo aircraft)	956
Max net qty / pkg	400.00 kg
Packing instruction (passenger aircraft)	956
Max net qty / pkg	400.00 kg
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	- All substances listed as active on the TSCA inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australian Inventory of Industrial Chemicals (AIIC)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- One or more components not 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
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components are listed on the NZIoC inventory. Additional HSNO obligations may apply. Please refer to Section 15 of SDS for New Zealand.
EU. European Registration, Evaluation, Authorization and Restriction of Chemical (REACH)	- When purchased from a Syensqo legal

PRCO90082268

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	entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.
Korea. Act on Registration and Evaluation of Chemicals	- When purchased from a Syensqo legal entity based in Korea, this product is compliant with "Act on Registration and Evaluation of Chemicals" (AREC or K-REACH, Article 10) as all its components are either excluded, exempt, and/or (pre)registered. When purchased from a legal entity outside of Korea, please contact your local representative for additional information.

15.2 Federal Regulations

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

Combustible dust	Yes
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The categories not mentioned are not relevant for the product.

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)

This material does not contain any components with a section 302 EHS TPQ.

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)

Components	CAS-No.	Reportable quantity
2-Butenedioic acid (2E)-	110-17-8	5000 lb

15.3 State Regulations

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

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

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

Health	1 slight
Flammability	1 slight
Instability or Reactivity	0 minimal

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.
- Distribute new edition to clients

Date Prepared: 02/28/2024

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

- PEL: Permissible exposure limit (PEL)
- TWA: Time weighted average
- 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
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Specification for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

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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.