

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: November 13, 2020

## 1 Identification

- **Product identifier**

- **Trade name:** GP-62
- **Product code:** C-4612
- **CAS Number:**  
78-10-4

- **Other means of identification:**

Ethyl silicate, ((EtO)<sub>4</sub>Si); Poly(tetraethyl orthosilicate); Silicic acid (H<sub>4</sub>SiO<sub>4</sub>), tetraethyl ester; Silicon ethoxide; Silicon tetraethoxide; TEOS; Tetraethoxysilane; Tetraethyl silicate; Tetraethoxysilane

- **Recommended use and restriction on use**

- **Recommended use:** Industrial uses.
- **Restrictions on use:** No relevant information available.

- **Details of the supplier of the Safety Data Sheet**

- **Manufacturer/Supplier:**

Genesee Polymers Corporation  
G-4099 S. Dort Hwy.  
Burton, MI 48529  
(810) 715-5018  
customerservice@gpcsilicones.com



- **Emergency telephone number:**

ChemTel  
1-800-255-3924 (North America)  
+1 (813)248-0585 (International)

## 2 Hazard(s) identification

- **Classification of the substance or mixture**

Flam. Liq. 3 H226 Flammable liquid and vapor.  
Acute Tox. 4 H332 Harmful if inhaled.  
Eye Irrit. 2A H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS02 GHS07

- **Signal word:** Warning

- **Hazard statements:**

H226 Flammable liquid and vapor.  
H332 Harmful if inhaled.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

- **Precautionary statements:**

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P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing mist, vapors, or spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection.
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.
P312	Call a poison center/doctor if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use foam, powder, or carbon dioxide for extinction.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

## 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

78-10-4 tetraethyl silicate

## 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:**

Supply fresh air; consult doctor in case of complaints.

Provide oxygen treatment if affected person has difficulty breathing.

· **After skin contact:**

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If skin irritation is experienced, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

· **Most important symptoms and effects, both acute and delayed:**

Gastric or intestinal disorders when ingested.

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Breathing difficulty

Coughing

May cause respiratory irritation.

· **Danger:** Harmful if inhaled.

· **Indication of any immediate medical attention and special treatment needed:**

No relevant information available.

## 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

Foam

Sand

Carbon dioxide

Fire-extinguishing powder

Gaseous extinguishing agents

Alcohol resistant foam

· **For safety reasons unsuitable extinguishing agents:** Water

· **Special hazards arising from the substance or mixture**

Flammable liquid and vapor.

Formation of toxic gases is possible during heating or in case of fire.

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

· **Additional information:**

Use large quantities of foam as it is partially destroyed by the product.

Eliminate all ignition sources if safe to do so.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

Keep away from ignition sources.

Protect from heat.

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.

· **Environmental precautions** Avoid release to the environment.

· **Methods and material for containment and cleaning up**

Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).

Send for recovery or disposal in suitable receptacles.

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

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- **Handling**
- **Precautions for safe handling:**
  - Avoid splashes or spray in enclosed areas.
  - Use only in well ventilated areas.
  - Avoid breathing mist, vapors, or spray.
  - Open and handle receptacle with care.
- **Information about protection against explosions and fires:**
  - Flammable liquid and vapor.
  - Keep ignition sources away - Do not smoke.
  - Flammable gas-air mixtures may be formed in empty containers/receptacles.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**
  - Avoid storage near extreme heat, ignition sources or open flame.
- **Information about storage in one common storage facility:**
  - Store away from foodstuffs.
  - Store away from oxidizing agents.
  - Store away from water.
  - Do not store together with strong acids.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No relevant information available.

## 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

**78-10-4 tetraethyl silicate**

PEL (USA)	Long-term value: 850 mg/m <sup>3</sup> , 100 ppm
REL (USA)	Long-term value: 85 mg/m <sup>3</sup> , 10 ppm
TLV (USA)	Long-term value: 85 mg/m <sup>3</sup> , 10 ppm
EL (Canada)	Long-term value: 10 ppm
EV (Canada)	Long-term value: 85 mg/m <sup>3</sup> , 10 ppm
LMPE (Mexico)	Long-term value: 10 ppm

- **Exposure controls**

- **General protective and hygienic measures:**

- The usual precautionary measures for handling chemicals should be followed.
- Keep away from foodstuffs, beverages and feed.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes.
- Avoid close or long term contact with the skin.
- Avoid breathing mist, vapors, or spray.

- **Engineering controls:** Provide adequate ventilation.

- **Breathing equipment:**

Wear appropriate NIOSH respirator when ventilation is inadequate and occupational exposure limits are exceeded.

- **Protection of hands:**

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Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Material of gloves**

Nitrile rubber, NBR

Butyl rubber, BR

· **Eye protection:**



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

· **Body protection:** Protective work clothing

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **Appearance:**

Form: Liquid

Color: Clear

· **Odor:** Not determined.

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Melting point/Melting range:** <0 °C (<32 °F)

· **Boiling point/Boiling range:** 167 °C (332.6 °F)

· **Flash point:** 46 °C (114.8 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits**

Lower: Not determined.

Upper: Not determined.

· **Oxidizing properties:** Non-oxidizing.

· **Vapor pressure:** Not determined.

· **Density:**

Relative density: 0.930-0.940

Vapor density: Not determined.

Evaporation rate: Not determined.

· **Solubility in / Miscibility with**

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**Water:** Not determined.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity**

**Dynamic:** 0.75 cP

**Kinematic:** Not determined.

· **Other information** No relevant information available.

## 10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**  
Flammable liquid and vapor.  
Used empty containers may contain product gases which form explosive mixtures with air.  
Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.  
Reacts with oxidizing agents.  
Reacts with strong acids.  
Reacts with water.  
Reacts with alkaline metals.
- **Conditions to avoid**  
Excessive heat.  
Moisture.
- **Incompatible materials**  
Oxidizing agents.  
Water  
Strong acids
- **Hazardous decomposition products**  
Ethanol  
Under fire conditions only:  
Silicon oxides.  
Carbon monoxide and carbon dioxide

## 11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:** Harmful if inhaled.

· **LD/LC50 values that are relevant for classification:**

**78-10-4 tetraethyl silicate**

Oral	LD50	6270 mg/kg (rat)
Dermal	LD50	5878 mg/kg (rabbit)

· **Primary irritant effect:**

· **On the skin:** Based on available data, the classification criteria are not met.

· **On the eye:** Causes eye irritation.

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- **Sensitization:** Based on available data, the classification criteria are not met.

- **IARC (International Agency for Research on Cancer):**

Substance is not listed.

- **NTP (National Toxicology Program):**

Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration):**

Substance is not listed.

- **Probable route(s) of exposure:**

Ingestion.

Inhalation.

Eye contact.

Skin contact.

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** May cause respiratory irritation.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Other adverse effects** No relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- **UN-Number**
- **DOT, ADR/RID/ADN, IMDG, IATA** UN1292
- **UN proper shipping name**

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· DOT, ADR/RID/ADN, IMDG, IATA

TETRAETHYL SILICATE

· Transport hazard class(es)

· DOT



· Class

3

· Label

3

· ADR/RID/ADN



· Class

3 (F1)

· Label

3

· IMDG, IATA



· Class

3

· Label

3

· Packing group

· DOT, ADR/RID/ADN, IMDG, IATA

III

· Environmental hazards

· Marine pollutant:

No

· Special precautions for user

Warning: Flammable liquids

· Hazard identification number (Kemler code):

30

· EMS Number:

3-06

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

· Transport/Additional information:

· DOT

Classified as combustible under US DOT regulations. Labeling is only required for single packages  $\geq 119$  US gal / 450 L.

· ADR/RID/ADN



Limited Quantity for packages less than 30 kg gross and inner packagings less than 5 L each.

· IMDG

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Limited Quantity for packages less than 30 kg gross and inner packagings less than 5 L each.

· IATA



Limited Quantity for packages less than 30 kg gross and inner packagings less than 5 L each / 10 L net.

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- United States (USA)
- SARA

· **Section 302 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act)**

Substance is listed

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity for females:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **EPA (Environmental Protection Agency):**

Substance is not listed.

· **IARC (International Agency for Research on Cancer):**

Substance is not listed.

· **Canadian Domestic Substances List (DSL):**

Substance is listed

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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**· Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

OSHA: Occupational Safety &amp; Health Administration

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

**· Sources**Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers