

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

1.1. Product identifier

Product form : Substance
 Trade name : Tetramer
 IUPAC name : Alkenes, C10-14-branched and linear, C12-rich
 CAS No : 68526-58-9 ^[1]
 Product code : P502, P502FL

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

Use of the substance/mixture : Distribution; Intermediate; Industrial; For professional use only.

1.3. Details of the supplier of the safety data sheet

US office:
 Braskem S.A.
 5100 Westheimer Rd - Suite 495
 Houston, 77056 - USA

Manufacturer:
 Braskem S.A.
 Av. Presidente Costa e Silva, 1178 – Capuava
 Santo André, SP, CEP: 09270-001, Brasil

Contact Email : productsafety@braskem.com

Emergency Telephone Number (CHEMTREC) : 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 3 H226

Asp. Tox. 1 H304

Full text of H-statements: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS02

GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H226 - Flammable liquid and vapor
 H304 - May be fatal if swallowed and enters airways

Precautionary statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
 P233 - Keep container tightly closed
 P240 - Ground/bond container and receiving equipment
 P241 - Use explosion-proof electrical, lighting, ventilating equipment
 P242 - Use only non-sparking tools
 P243 - Take precautionary measures against static discharge
 P280 - Wear eye protection, protective gloves, Respiratory protection
 P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 P331 - Do NOT induce vomiting
 P370+P378 - In case of fire: Use carbon dioxide (CO₂), dry extinguishing powder, foam to extinguish
 P403+P235 - Store in a well-ventilated place. Keep cool
 P405 - Store locked up
 P501 - Dispose of contents/container to hazardous or special waste collection point, in

^[3] Please find additional information on section 16.

accordance with local, regional, national and/or international regulation

2.3. Other hazards

other hazards which do not result in classification : None known.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : UVCB

Name	Product identifier	%
Alkenes, C10-14-branched and linear, C12-rich (Main constituent)	(CAS No) 68526-58-9	100

Full text of H-statements: see section 16

Synonym : Olefins (C13+, all isomers); propylene tetramer

3.2. Mixture

Not applicable

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow breathing of fresh air. Allow the victim to rest. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.
- First-aid measures after skin contact : Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Seek medical attention if ill effect or irritation develops.
- First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists.
- First-aid measures after ingestion : Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. May result in aspiration into the lungs, causing chemical pneumonia. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

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

- Symptoms/injuries after inhalation : Aspiration of this material may cause chemical pneumonia.
- Symptoms/injuries after skin contact : May cause slight irritation to the skin. Prolonged or repeated contact with the skin may cause dermatitis.
- Symptoms/injuries after eye contact : May cause slight temporary irritation.
- Symptoms/injuries after ingestion : Ingestion may cause nausea and vomiting. May be fatal if swallowed and enters airways. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. Pulmonary edema.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide (CO₂), dry chemical powder, foam. Water fog.
- Unsuitable extinguishing media : Do not use a water jet since it may cause the fire to spread. Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Material can accumulate some static charge during transfer. Flammable liquid and vapor. Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases.
- Explosion hazard : May form flammable/explosive vapor-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
- Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

- Firefighting instructions : Cool down the containers exposed to heat with a water spray. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protective equipment for firefighters : For large fire : Use self-contained breathing apparatus and chemically protective clothing. For small fire : Fight fire from safe distance and protected location. Refer to section 8. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use only antistatically equipped (spark-free) tools. Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

Protective equipment : Use personal protective equipment as required. Refer to section 8.
 Emergency procedures : Use only antistatically equipped (spark-free) tools. Eliminate every possible source of ignition. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Refer to section 8. Equip cleanup crew with proper protection.
 Emergency procedures : Evacuate unnecessary personnel. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection. Ventilate area.

6.2. Environmental precautions

Prevent contamination of soil, drains and surface waters. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
 Methods for cleaning up : Take up large spills with pump or vacuum. Use only antistatically equipped (spark-free) tools. Absorb remaining liquid with sand or inert absorbent and remove to safe place. Consult the appropriate authorities about waste disposal. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

For further information refer to section 8: Exposure-controls/personal protection. For disposal of residues refer to section 13: Disposal considerations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.
 Precautions for safe handling : Ground/bond container and receiving equipment. Carry out operations in the open/under local exhaust/ventilation or with respiratory protection. Never use pressure to empty container. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools.
 Hygiene measures : Handle in accordance with good industrial hygiene and safety practices. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground equipment electrically. Keep away from sources of ignition - No smoking. Avoid static electricity discharges. Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical, lighting, ventilating equipment.
 Storage conditions : Keep away from ignition sources (including static discharges). Store tightly closed in a dry, cool and well-ventilated place. Keep only in the original container in a cool well ventilated place. Keep container tightly closed.
 Incompatible materials : Strong oxidizing agents. Strong acids. Strong bases.

7.3. Specific end use(s)

Refer to section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls	: Provide local exhaust or general room ventilation to minimize vapor concentrations. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Hand protection	: Impermeable protective gloves. It is recommended that the glove supplier be consulted to ensure the protective gloves are resistant to chemicals in this product.
Eye protection	: Chemical goggles or face shield with safety glasses.
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: Characteristic, petroleum-like odor
Odor threshold	: No data available
pH	: Not applicable
Relative evaporation rate (butyl acetate=1)	: Not applicable
Melting point	: No data available
Freezing point	: < - 80 °C
Boiling point	: 171 - 208 °C
Flash point	: 52 °C (closed cup)
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not applicable
Flammability (solid, gas)	: Flammable
Vapor pressure	: 20 mm Hg (284 hPa; at 19°C)
Relative vapor density at 20 °C	: 5.81 (Air = 1)
Relative density	: No data available
Density	: 0.77 - 0.785 (at 20°C)
Solubility	: Soluble in benzene. Water: Insoluble Ethanol: Soluble
Log Pow	: Not available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: Not applicable.
Explosive limits	: 0.8 - 5.4 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable at room temperature. Flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

No dangerous reactions known.

10.4. Conditions to avoid

Avoid ignition sources. Keep away from heat. Avoid static electricity discharges. Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂). Hydrocarbons. Fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable
Serious eye damage/irritation	: Not classified pH: Not applicable
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.
Symptoms/injuries after inhalation	: Aspiration of this material may cause chemical pneumonia.
Symptoms/injuries after skin contact	: May cause slight irritation to the skin. Prolonged or repeated contact with the skin may cause dermatitis.
Symptoms/injuries after eye contact	: May cause slight temporary irritation.
Symptoms/injuries after ingestion	: Ingestion may cause nausea and vomiting. May be fatal if swallowed and enters airways. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. Pulmonary edema.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

Tetramer (93821-12-6)	
Persistence and degradability	This product has little potential to bioaccumulate in aquatic organisms, is expected to rapidly degrade, and is not expected to persist. Will not undergo hydrolysis. May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

Tetramer (93821-12-6)	
Log Pow	Not available
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Dispose of this material and its container to hazardous or special waste collection point. Disposal must be done according to official regulations.

Waste disposal recommendations	: Dispose of this material and its container to hazardous or special waste collection point. Do not allow to enter into surface water or drains. Do not re-use empty containers. Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials	: Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

Classification for LAND transport: DOT

UN Number	: UN2850
Proper Shipping Name	: PROPYLENE TETRAMER
Class	: 3
Packing group	: III
Reportable quantity	: Not applicable

Classification for SEA transport: IMO - IMDG

UN Number	: UN2850
Proper Shipping Name	: PROPYLENE TETRAMER
Class	: 3
Packing group	: III
Marine Pollutant	: Yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Product Name	: Propylene Tetramer
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Classification for AIR transport: IATA - ICAO

UN Number	: UN2850
Proper Shipping Name	: Propylene Tetramer
Class	: 3
Packing group	: III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product, therefore it cannot be considered exhaustive. See guidelines of US DOT, IMDG and IATA regulations before transporting the product. The transportation organization is responsible for compliance with laws, regulations and rules for the transport of the material.

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

Tetramer (93821-12-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations

Tetramer (93821-12-6)

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

15.3. US State regulations

No additional information available

SECTION 16: Other information

Sources of Key data	: Data arise from reference works and literature.
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Other information

: The regulatory information is based on data available for CAS 93821-2-6, in order to be more conservative in HES aspects. This material is very similar in composition to CAS 93821-2-6 and as such may be described as CAS 93821-2-6.

Full text of H-statements:

-----	Asp. Tox. 1	Aspiration hazard, Category 1
-----	Flam. Liq. 3	Flammable liquids, Category 3
-----	H226	Flammable liquid and vapor
-----	H304	May be fatal if swallowed and enters airways

Braskem - SDS US

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. It warns that the handling of any chemical substance requires the previous knowledge of its hazards for the user. It is up to the user of the product company providing this SDS to and promote the training of its employees about possible risks come upon of the product. The information contained herein is not absolute, but only general information on the use of the chemical and indication of safety and security measures.