In accordance with Globally Harmonized System of Classification and Labelling of Chemicals (GHS)- Chapter 1.5 and Annex 4

SAFETY DATA SHEET

Product: PROPENO GRAU QUÍMICO

Revision: 02	Date: 06/13/2024	Pages: 1/8

1 - IDENTIFICATION

GHS Product identifier:	PROPENO GRAU QUÍMICO
Other means of identification:	PRQ61J
Recommended use of the chemical:	Used in the manufacture of polypropylene and as fuel in industrial processes.
Specific restrictions on use:	There are not known restrictions on use.
Supplier`s details:	Acelen **Address**: ROD BA 523, KM 4, MATARIPE, CEP: 43900-000 - BA - Brasil. **Phone number**: (71) 3511-8000 / (11) 5225-8900
Emergency phone number:	EMERGENCIall: 0800 729 2756 / (11) 94759-7282 (Whatsapp) (24h)

2 - HAZARD IDENTIFICATION

Classification of the substance or mixture:	Flammable gases - Category 1A; Gases Under Pressure - Liquefied.
Classification system adopted:	Globally Harmonized System of Classification and Labeling of Chemicals (GHS), United Nations.
GHS label elements, including precautionary statements	
Pictograms:	
Signal word:	DANGER
Hazard statement(s):	H220 Extremely flammable gas. H280 Contains gas under pressure; may explode if heated.
Precautionary statement(s):	**PREVENTION:** P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P222 Do not allow contact with air. P280 Wear protective gloves, protective clothing, eye protection, face protection and hearing protection. **RESPONSE TO EMERGENCY:** P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 In case of leakage, eliminate all ignition sources. **STORAGE:** P403 Store in a well-ventilated place. P410 + P403 Protect from sunlight. Store in a well-ventilated place.
Other hazards which do not result in classification:	Simple asphyxiant. Forms explosive mixtures in contact with air.

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3 - COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE

Common chemical name:	Propylene.
Common name(s), synonym(s) of the substance:	
CAS:	115-07-1
Components contributing to the hazard:	Propane (CAS 74-98-6): < 1.0 %.

4 - FIRST-AID MEASURES

Description of necessary first-aid measures

Inhalation:	Gases may cause dizziness and asphyxia. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Monitor respiratory function. If the victim shows difficulty breathing, then give oxygen. If necessary, apply artificial respiration. Consult a doctor. Bring this SDS.
Skin:	In case of contact of the product in pressurized form with the skin, it can cause injury or frostbite (frostbite). Wash exposed skin immediately with sufficient amount of water. Clothing adhered to the skin should be thawed in warm water before being removed. Consult a doctor. Bring this SDS.
Eye:	In case of contact of the product in pressurized form with eyes, may occur injury or frostbite. Wash the eyes with sufficient amount of water immediately, keeping the eyes opened. In case of use of contact lenses, remove them, if possible. Keep washing. Contact a doctor. Bring this SDS.
Ingestion:	Not applicable.
Most important symptoms/effects, acute and delayed:	Contact of the liquefied gas with the skin can cause “ freeze burns” (frostbite). Contact of the liquefied gas with the skin can cause “ freeze burns” (frostbite).
Indication of immediate medical attention and special treatment needed, if necessary:	Avoid contact with the product to help the victim. Keep victim warm and quiet. Symptomatic treatment should comprise mainly supportive measures such as correction of electrolyte disturbances, metabolic, and respiratory support. In case of skin contact do not rub the affected area.

5 - FIRE-FIGHTING MEASURES

Extinguishing media:	Appropriate: carbon dioxide (CO_2), water mist and powder. Inappropriate: water jet directly.
Specific hazards arising from the chemical:	The combustion of the chemical containers may form toxic and irritant gases such as carbon monoxide and carbon dioxide. Gases may be heavier than air and may accumulate in low or confined areas, such as sewers and basements. Containers may explode if heated.
Special protective actions for fire-fighters:	Use self-contained breathing apparatus (SCBA) operated in positive pressure mode and complete protective clothing. Containers and tanks involved in the fire should be cooled with water mist.

6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:	Prevent sparks or flames. Do not smoke. Do not touch damaged containers or spilled material without the use of appropriate clothing. Avoid exposure to the product. Stay in a safe place, with

	wind from behind. Use personal protective equipment as described in Section 8.
For emergency responders:	Wear complete PPE with safety glasses, safety gloves, suitable protective clothing and closed shoes. In case of leakage, where exposure is high, it is recommended to use a suitable respiratory protection mask.
Environmental precautions:	Avoid that the dispersed gas reaches waterways or sewage system.
Methods and materials for containment and cleaning up:	Release the contents slowly into the atmosphere. Stay downwind. Do not pour water directly into the leak point. Due to the product dispersion in the environment, it is recommended that the area is ventilated until the release site.For final destination, proceed pursuant to Section 13 of this SDS.

7 - HANDLING AND STORAGE

Precautions for safe handling

Precautions for safe handling:	Handle in a well ventilated area or with general system of ventilation/local exhaust. Avoid gases and aerosols formation. Avoid exposure to the chemical, since the effects may not be felt immediately. Avoid contact with incompatible materials.
General hygiene:	Wash hands and face thoroughly after handling and before eating, drinking, smoking or going to the bathroom. Contaminated clothing should be changed and washed before reuse. Remove clothing and protective equipment contaminated before entering eating areas.

Conditions for safe storage, including any incompatibilities

Technical measures for prevention of fire and explosion:	Keep away from heat, sparks, open flames and hot surfaces. - Do not smoke. Keep container tightly closed. Ground the container vessel and the receiver of the product during transfers. Only use anti-sparking tools. Avoid the accumulation of electrostatic charges. Use electrical equipment, ventilation and lighting explosion proof. Use personal protective equipment as described in Section 8.
Conditions for safe storage, including any incompatibilities:	Store in a well ventilated place, away from sunlight. Keep container closed. Keep away from high temperatures and ignition sources. It is not necessary addition of stabilizers and antioxidants to ensure the durability. This material may react dangerously with some incompatible materials as outlined in Section 10. Keep away from incompatible materials.
Packaging compatibilities:	Similar to the original packaging.
Inadequate packaging materials:	Carbon steel balls.

8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limit:	The values below apply to workplaces. - Propylene: ACGIH - TLV - TWA: 500 ppm. - Propane: OSHA - PEL - TWA: 1000 ppm (1800 mg/m³) (29 CFR 1910.1000 Table Z-1) (CFR); NIOSH - REL - TWA: 1000 ppm (1800 mg/m³); ACGIH - TLV - TWA: (D. EX) (AF). - Methane: ACGIH - TLV - TWA: (AF; D; EX). - Ethane: ACGIH - TLV - TWA: See Appendix F: Minimal Oxygen Content (D; EX).

	D: Simple asphyxiant; EX: Explosion hazard: the substance is a flammable asphyxiant or excursions above the TLV® could approach 10% of the lower explosive limit; AF: See Appendix F: Minimal Oxygen Content. CFR: See mentioned item in OSHA CFR; F: Respirable fibers: length > 5 µm; aspect ratio > 3:1, as determined by the membrane filter method at 400–450X magnification (4-mm objective), using phasecontrast illumination.
Biological limit:	Not established.
Other limits and values:	Not established.
Appropriate engineering controls:	Promote mechanical ventilation and exhaust system to outside. These acts help reducing the exposition to the product. It is recommended to make emergency showers and eye wash facilities available in the work area. Maintain airborne concentrations of the substance or mixture below stated occupational exposure limits. Maintain atmospheric concentrations of the constituents of the material below occupational exposure limits indicated.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection:	Wide-view glasses with splash protection.
Skin protection:	Safety shoes and safety clothing to protect the whole body from chemical splashes. Protective gloves against chemicals such as PVC.
Respiratory protection:	Use of respirator with filter against vapors and organic mists is recommended for average exposures above half the TLV-TWA. In cases where exposure exceeds 3 times the TLV-TWA value, use a self-contained, full facepiece, air-supplied respirator (SCBA) operated in positive pressure mode. Follow guidance from the Respiratory Protection Program (PPR), 4th ed. São Paulo: Fundacentro, 2016.
Thermal hazards:	It does not present thermal hazards.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Aspect:	Gas.
Color:	Colorless.
Odour:	Characteristic.
Melting point/freezing point:	-172 °C (-277.6 °F).
Boiling point or initial boiling point and boiling range:	-48 °C (-54.4 °F).
Flammability:	Flammable.
Lower and upper explosion limit/flammability limit:	Upper: 12.5 % and Lower: 3 %.
Flash point:	-108 °C (-162.4 °F) - Closed cup.
Auto-ignition temperature:	472 °C (881.6 °F).
Decomposition temperature:	Not available.
pH:	Not applicable.

Kinematic viscosity:	Not available.
Solubility(ies):	Immiscible in water (60.4 mg/L (60400 mg/m³)). Soluble in ether and benzene.
Partition coeficient n-octanol/water (log value):	Not available.
Vapour pressure:	5.21 x10^4 mmHg (694.60762 x10^4 Pa) at 25 °C (77 °F).
Relative vapour density:	1.56 (air = 1).
Density and/or relative density:	Relative density: 0.515 (water at 4 °C(39,2 °F) = 1) at 20 °C (68 °F).
Particle characteristics:	Not applicable.
Other information:	Critical temperature: 32 °C (89.6 °F). Critical pressure: 48.2 atm.

10 - STABILITY AND REACTIVITY

Reactivity:	May undergo hazardous polymerization at elevated pressures and temperatures or in the presence of catalysts.
Chemical stability:	Stable product under normal conditions of temperature and pressure.
Possibility of hazardous reactions:	Propane: May react dangerously with risk of explosion in contact with chlorine dioxide. May react dangerously in contact with barium peroxide.
Conditions to avoid:	Elevated temperatures. Ignition sources. Contact with incompatible materials.
Incompatible material:	Acetylene, barium peroxide, bromine, chloro dioxide, nitrogen oxides, oxidizing agents and oxygen.
Hazardous decomposition products:	There are no known hazardous decomposition products.

11 - TOXICOLOGICAL INFORMATION

Acute toxicity:	Product not classified as acute toxic by inhalation. ATEmix Gases (4h): > 20000 µ L/L (ppm).
Skin corrosion/irritation:	Contact of the liquefied gas with the skin can cause “ freeze burns” (frostbite).
Serious eye damage/irritation:	Contact of the liquefied gas with the skin can cause “ freeze burns” (frostbite).
Respiratory or skin sensitization:	It is not expected to present respiratory or skin sensitization.
Germ cell mutagenicity:	It is not expected to show mutagenicity in germ cells.
Carcinogenicity:	It is not expected to be carcinogenic.
Reproductive toxicity:	It is not expected to be reproductively toxic.
STOT - Single exposure:	It is not expected to exhibit specific target organ toxicity by single exposure.
STOT - Repeated exposure:	It is not expected to exhibit specific target organ toxicity on repeated exposure.
Aspiration hazard:	It is not expected to present an aspiration hazard.

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12 - ECOLOGICAL INFORMATION

Toxicity:	It is not expected to be ecotoxic.
Persistence and degradability:	It is not expected to present persistence and degradability.
Bioaccumulative potential:	It is not expected to have a high bioaccumulative potential.
Mobility in soil:	Not determined.
Other adverse effects:	No other environmental effects known.

13 - DISPOSAL CONSIDERATIONS

Disposal methods

Must be disposed of as hazardous waste in compliance with local regulations. The treatment and disposal should be evaluated for each specific product.
Keep the product remains in its original and properly closed containers. Disposal should be performed as established for the product.

14 - TRANSPORT INFORMATION

Road:	UN - United Nations: Model Regulations: • Recommendations on the Transport of Dangerous Goods.
UN number:	1077
Proper shipping name:	PROPYLENE
Primary risk class or division:	2.1
Subsidiary risk class or division:	NA
Packing group:	NA
Environmental hazards:	The product is not considered dangerous for the environment for land transport.
Railway regulations:	COTIF - Convention concerning International Carriage by Rail: • Appendix C: RID - Regulations concerning the International Carriage of Dangerous Goods by Rail.
UN number:	1077
Proper shipping name:	PROPYLENE
Primary risk class or division:	2.1
Subsidiary risk class or division:	NA
Packing group:	NA
Environmental hazards:	The product is not considered dangerous for the environment in rail transport.
Sea:	IMO - International Maritime Organization: • IMDG Code - International Maritime Dangerous Goods Code.

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Product: PROPENO GRAU QUÍMICO

UN number:	1077
Proper shipping name:	PROPYLENE
Primary risk class or division:	2.1
Subsidiary risk class or division:	NA
Packing group:	NA
Environmental hazards:	It's not considered a marine pollutant for transportation.
EmS:	F-D,S-U
Air:	IATA - International Air Transport Association: • DGR - Dangerous Goods Regulation.
UN number:	1077
Special precautions for user:	Not applicable.
Maritime transport in bulk according to IMO instruments:	Consult regulations: • International Maritime Organization: MARPOL: Articles, protocols, annexes, unified interpretations of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, consolidated edition. IMO, London, 2006; • International Maritime Organization: IBC code: International code for the construction and equipment of shipping carrying dangerous chemicals in bulk: With Standards and guidelines relevant to the code. IMO, London, 2007.

15 - REGULATORY INFORMATION

Convention concerning Safety in the use of Chemicals at Work (Convention 170) - International Labour Organization, 1990.

16 - OTHER INFORMATION

This SDS was prepared based on current knowledge about the proper product handling and under normal conditions of use, in accordance with the application specified on the packaging. Any other use of the product involving their combination with other materials, and use various forms of those indicated, are the responsibility of the user. Warns that the handling of any chemical substance requires the prior knowledge of its hazards for the user. In the workplace it is for the user company's product promotes training of its collaborators about the possible risks arising from exposure to the chemical.

Change control:

Version	Manufacture date	Changes
02	08/22/2023	Change in composition. Change in section: 2.

Abbreviations:
ACGIH - American Conference of Governmental Industrial Hygienists;
ATEmix - Acute Toxicity Estimate of the mixture;
CAS - Chemical Abstracts Service;

NIOSH - National Institute for Occupational Safety and Health;
OSHA - Occupational Safety & Health Administration;
PEL - Permissible Exposure Limit;
REL - Recommended Exposure Limit;
TLV - Threshold Limit Value;
TWA - Time Weighted Average;
UN - United Nations.

Bibliographic references:

ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIALS HYGIENISTS. TLVs® and BEIs®: Based on the Documentation of the Threshold Limit Values (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®). Cincinnati-USA, 2023.

GHS - GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS. 10th rev. ed. New York and Geneva: United Nations, 2023.