

**SAFETY DATA SHEET**
**Product:** ETHYL METHACRYLATE - EMA

Version: 09


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**SECTION 1: IDENTIFICATION**

Identification of the product	ETHYL METHACRYLATE – EMA.
Recommended use of the chemical and restrictions on use	Industrial use.
Company	PROQUIGEL QUÍMICA S/A.
Address	Fazenda Caroba s/n, Candeias - BA - CEP: 43.813-300, Brazil.
Phone number(s)	55 (71) 3878-6633.
Emergency phone number	0800 110 8270 Pró-Química.

**SECTION 2: HAZARD IDENTIFICATION**

Classification of the substance or mixture	Flammable liquids – Category 2 Skin corrosion/irritation – Category 2 Eye damage/irritation – Category 2A Sensitization – skin – Category 1 Specific target organ toxicity – single exposure – Category 3 Hazardous to the aquatic environment – Acute – Category 3
Classification system adopted	Globally Harmonized System of Classification and Labelling of Chemicals (GHS), United Nations, 2019.
Other hazards which do not result in classification	The product does not have other hazards.
Adequate labeling elements	
Pictograms	
Signal word	DANGER

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## Hazard statement(s):

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H402 Harmful to aquatic life

## Precautionary statement(s):

**PREVENTION:**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical, ventilating and lighting equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P261 Avoid breathing mist, vapours and spray.

P264 Wash hands thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves, protective clothing, eye protection and face protection.

**RESPONSE:**

P302 + P352 IF ON SKIN: Wash with plenty water and soap.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P304 + P340 IF INHALED: Remove person to fresh air and keep

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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 or a doctor, if you feel unwell.

P321 Specific treatment.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P337 + P313 If eye irritation persists: Get medical advice.

P362 + P364 Take off contaminated clothing and wash it before reuse.

P370 + P378 In case of fire: Use carbon dioxide, water spray, alcohol resistant foam or chemical powder to extinguish.

**STORAGE:**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

**DISPOSAL:**

P501 Dispose of contents and container in accordance with local regulations.

**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**

SUBSTANCE

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Common chemical name	Ethyl methacrylate.
Common name(s), synonym(s) of the substance	Ethyl 2-methyl-2-propenoate; Ethyl 2-methylacrylate.
CAS number	97-63-2.
Ingredients or impurities contributing to the hazard	The product does not have impurities which contribute to hazards.

**SECTION 4: FIRST- AID MEASURES****Routes of exposure**

Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse the victim's mouth with water. Call a POISON CENTER or doctor/physician if you feel unwell. Take this SDS.
Skin	Wash exposed skin with enough water and soap to remove the material for 15-20 minutes. In case of irritation: Consult a doctor. Take this SDS.
Eye	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. If eye irritation persists: Get medical advice/attention. Take this SDS.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Take this SDS.
Most important symptoms/effects, acute and delayed	Causes skin irritation with redness, pain and dryness, and slight eye irritation with tearing and redness. May cause pruritus, dermatitis, coughing and sneezing.
Indication of immediate medical	Avoid contact with the product to help the victim. Keep victim

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attention and special treatment needed, if necessary	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 site.
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**SECTION 5: FIRE-FIGHTING MEASURES**

Suitable extinguishing media	Suitable: Compatible with carbon dioxide (CO <sub>2</sub> ), water spray, foam and chemical powder. Not recommended: Water directly on the burning liquid.
Specific hazards arising from the chemical	Very dangerous when exposed to excessive heat or other sources of ignition such as sparks, open flames or flames of matches and cigarettes, welding operations, pilot lights and electric motors. Can accumulate static charge by flow or agitation. Vapors from heated liquid can be ignited by static discharge. Vapors are heavier than air and tend to accumulate in low or confined areas, such as sewers and basements. Can travel great distances causing retrogression of the flame or new fires both in open environments in as confined ones. Containers may explode if heated. The combustion of the chemical products or containers may form toxic and irritant gases such as methanol, carbon monoxide and carbon dioxide.
Special protective actions for fire-fighters	If the material is on fire or involved in fire: Submerge with water. Cool all affected containers with plenty of water. Approach the fire against the wind to avoid dangerous vapors and toxic decomposition products. Use large amounts of water in the containers involved in the fire. If necessary, use water spray to cool fire-exposed containers.

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Wear positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

## Personal precautions, protective equipment, and emergency procedures

**For non-emergency personnel** Prevent sparks or flames. Stop leak if this can be done without risk. Do not smoke. Do not touch damaged containers or spilled material without the use of appropriate clothing. Avoid exposure to the product. Stay upwind, uphill and/or upstream. Use personal protective equipment as described in Section 8.

**For emergency responders** Wear full PPE with safety goggles and face shield, appropriate protective clothing, closed shoes, neoprene, butyl rubber or polyethylene gloves to prevent skin contact. In case of leakage, where the exposure is high, it is recommended to wear multipurpose type masks for organic gases or breathable air mask. Evacuate the area within a radius of at least 100 meters. Keep unauthorized persons away from the area. Stop the leak if it can be done without risk.

**Environmental precautions** Prevent the product from reaching the soil and water courses. Notify the relevant authorities if the product has environmental superiority (if it has reached water courses or if it has contaminated the soil or vegetation).

**Methods and materials for containment and cleaning up** Use water mist or vapor suppressing foam to reduce the dispersion of vapors. Use natural barriers or spill containment. Collect spilled material and put it into containers. Adsorb the remaining product with dried sand, vermiculite or any other inert material. Put the adsorbed material in appropriate containers

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	and remove them to a safe place. Use tools that do not cause sparks to collect absorbed material. For final destination, proceed pursuant to Section 13 of this SDS.
Differences in the action of large and small leaks	Small spill: Use appropriate tools to place the spilled solid in an appropriate container. Large spill: Use a loader to place the material in an appropriate container. Finish with manual sweeping.

**SECTION 7: HANDLING AND STORAGE**

## Precautions for safe handling

Safe handling of the substance or mixture	Schedule a first aid action before starting the activity with the product. The use of the product is restricted to professionals. Caution - Avoid exposure - obtain special instructions before use. Handle in a well ventilated area or with general system of ventilation/local exhaust. Avoid vapors and mists formation. Avoid contact with incompatible materials. Ground the lines and equipment used during the transfer to reduce the possibility of a fire or explosion initiated by sparks of static electricity. Use non-sparking tools. Use personal protective equipment as described in Section 8.
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	Keep away from heat, sparks, open flames and hot surfaces. -

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prevention of fire and explosion	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.
Adequate conditions	Must be stored only if inhibited. Store the product in a cool, ventilated place. Store away from sources of ignition. Addition of stabilizers such as mequinol is required to ensure the product's durability. Store at room temperature. Do not store for prolonged periods. This product may react dangerously with some incompatible materials as highlighted in Section 10.
Packaging compatibilities	Stainless steel or aluminum.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

Control parameters

Occupational exposure limit	<table border="1"> <thead> <tr> <th>Common chemical name or technical name*</th> <th>TWA-TLV (ACGIH, 2020)</th> <th>NR-15 (MTE, 1978)</th> </tr> </thead> <tbody> <tr> <td>Methyl methacrylate (MMA) **</td> <td>TWA 50 ppm STEL 100 ppm</td> <td>78 ppm</td> </tr> </tbody> </table>	Common chemical name or technical name*	TWA-TLV (ACGIH, 2020)	NR-15 (MTE, 1978)	Methyl methacrylate (MMA) **	TWA 50 ppm STEL 100 ppm	78 ppm
	Common chemical name or technical name*	TWA-TLV (ACGIH, 2020)	NR-15 (MTE, 1978)				
Methyl methacrylate (MMA) **	TWA 50 ppm STEL 100 ppm	78 ppm					
* Ethyl Methacrylate - EMA is a higher molecular weight ester and has no established exposure limit, however it is suggested to adopt the exposure limit similar to Methyl Methacrylate - MMA for exposure control. ** A4: Not classified as carcinogenic to humans (ACGIH).							
Biological limit:	Not established.						
Other limits and values	Not established.						



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Appropriate engineering controls	Promote direct mechanical ventilation and exhaust system to the outside environment. These measures help reduce exposure to product.
Individual protection measures, such as personal protective equipment (PPE)	
Eye/face protection	Safety glasses and face shield.
Skin protection	Appropriate protective clothing, closed shoes, neoprene, butyl rubber or polyethylene gloves to prevent skin contact.
Respiratory protection	Respiratory protection masks with organic gas filter or autonomous mask. Based on the inhalation hazard of the product, a risk assessment must be carried out to adequately define respiratory protection in view of the conditions of use of the product.
Thermal hazards	It is not necessary to use specific EPIs, since the product does not present thermal hazards.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	Liquid.
Colour	Colorless.
Odour	Irritant.
Melting point/freezing point	- 75°C
Boiling point or initial boiling point and boiling range	119°C
Flammability	Not available.
Lower and upper explosion limit /flammability limit	Lower: 1.8%vol.
Flash point	21°C

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Auto-ignition temperature	470°C
Decomposition temperature	Not available.
pH	7.0 (Aqueous solution 5%).
Kinematic viscosity	0.87 cP
Solubility	Partially soluble in water (0.5 g/L at 20°C). Completely soluble in alcohol.
Partition coefficient n-octanol/water (log value)	log kow: 1.87
Vapour pressure	26.6 mmHg at 20°C
Density and/or relative density	0.911 (20°C/4°C)
Relative vapour density	Not available.
Particle characteristics	Not available.
Other information	Specific heat: 0.45 cal/g °C Refractive index: 1.412 a 25°C SAPT: greater than 55° C

**SECTION 10: STABILITY AND REACTIVITY**

Reactivity and chemical stability	Product not reactive. Unstable. Stable if mequinol is added as an inhibitor.
Possibility of hazardous reactions	Light, to heat, violent polymerization may occur if exposed to light and excessive heat, contact with organic peroxides, sulfuric radicals, hydroxides, amines, heavy metal salts and other initiators.

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Conditions to avoid	High temperatures, sources of ignition and contact with incompatible materials.
Incompatible material	Organic peroxides, sulfuric radicals, hydroxides, amines, heavy metal salts and other initiators.
Hazardous decomposition products	The combustion of the chemical or its packaging can form carbon monoxide and carbon dioxide and methanol.

**SECTION 11: TOXICOLOGICAL INFORMATION**

Acute toxicity	<p>The product is not expected to be toxic by mouth, skin and inhalation.</p> <p>LD50 (oral, ratos): 13.424 mg/kg.</p> <p>LC50 (inalação, ratos): 55.000 mg/m<sup>3</sup>.</p> <p>LD50 (dérmica, coelhos): &gt; 10 mL/kg.</p>
Skin corrosion/irritation	Causes skin irritation with redness, flaking and dryness.
Serious eye damage/irritation	Causes serious eye irritation with tearing, redness and pain.
Respiratory or skin sensitization	<p>The product is not expected to cause respiratory sensitization. Exposure to the product causes allergic reactions to the skin, with dermatitis and itching.</p> <p>Tests conducted with experimental animals (OECD 429), showed sensitizing potential of ethyl methacrylate.</p>
Germ cell mutagenicity	Based on available information, the classification criteria have not been met.
Carcinogenicity	Based on available information, the classification criteria have not been met.
Reproductive toxicity	Based on available information, the classification criteria have not been met.

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STOT - Single exposure	May cause respiratory irritation with coughing and sneezing.
STOT - Repeated exposure	Based on available information, the classification criteria have not been met.
Aspiration hazard	Based on available information, the classification criteria have not been met.

**SECTION 12: ECOLOGICAL INFORMATION**

Ecotoxicity	Harmful to aquatic life. LC50 (Oncorhynchus mykiss, 96h): 100.0 mg/L
Persistence and degradability	The product has no persistence and is considered to be rapidly degradable. Biodegradability rate: 79.1% in 21 days.
Bioaccumulative potential	It has low bioaccumulative potential in aquatic organisms. log <sub>kow</sub> : 1.87
Mobility in soil	No data available.
Other adverse effects	There are not known adverse environmental effects of the product.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Disposal methods

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It must be disposed of as hazardous waste according to local regulations. The treatment and disposal should be evaluated for each specific product. Keep the product remains in its original and properly closed. Disposal should be performed as established for the product. Do not reuse empty containers. These may contain product residues and should be kept closed and sent for proper disposal as established for the product.

**SECTION 14: Transport information**

Road	UN - "United Nations". Recommendations on the TRANSPORT OF DANGEROUS GOODS. Model Regulations.
UN Number	2277
UN Proper Shipping Name	ETHYL METHACRYLATE, STABILIZED
Transport hazard class(es):	3
Packing group:	II
Rail	Convention concerning International Carriage by Rail (COTIF) Appendix C - Regulations concerning the International Carriage of Dangerous Goods by Rail - RID
UN Number	2277
UN Proper Shipping Name	ETHYL METHACRYLATE, STABILIZED
Transport hazard class(es)	3
Packing group	II
Sea:	IMO – International Maritime Organization International Maritime Dangerous Goods Code (IMDG Code)
UN Number	2277
UN Proper Shipping Name	ETHYL METHACRYLATE, STABILIZED

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Transport hazard class(es)	3
Packing group	II
EmS	F-E, S-D
Marine pollutant	The product is not considered a marine pollutant.
Air	IATA - International Air Transport Association Dangerous Goods Regulation (DGR)
UN Number	2277
UN Proper Shipping Name	ETHYL METHACRYLATE, STABILIZED
Transport hazard class(es)	3
Packing group	II
Hazardous to the environment	The product is not considered environmentally hazardous
Special precautions for user	There is no need of special precautions.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	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.

**SECTION 15: REGULATORY INFORMATION**

Regulations for chemical products

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

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**SECTION 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.

Revised and adequate in março 2021.

Subtitles and abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists

BEI – Biological Exposure Index

CAS – Chemical Abstracts Service

EC<sub>50</sub> – Effective concentration 50%

LC<sub>50</sub> – Lethal concentration 50%

LD<sub>50</sub> – Lethal dose 50%

IARC – International Agency for Research on Cancer

IDLH – Immediately Dangerous to Life or Health

kow – Octanol/Water Partition Coefficient

NOEC – No Observed Effect Concentration

STEL – Short Term Exposure Limit

TLV – Threshold Limit Value

TWA – Time Weighted Average

References:

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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, 2020.

GHS. Globally Harmonized System of Classification and Labelling of Chemicals. 8. rev. ed. New York: United Nations, 2019.

SDS. Safety Data Sheet. Ethyl methacrylate. PROQUIGEL QUÍMICA. Versão: 8. Data: 22/06/2020.