

PRODUCT HANDLING – SAFETY INFORMATION

AKRYLON® extruded PMMA sheets

SECTION 1 Identification of the substance/mixture and company/enterprise

1.1 Product identifier

| | |
|---------------------------|--|
| Commercial name | - AKRYLON® |
| Chemical name | - Polymethylmetacrylate (PMMA) |
| CAS No. | - 9011-14-7 |
| REACH registration number | - Not subjected to registration according to the Directive of EP and Council (EC) No. 1907/2006 (Section I, Cl. 2, Par. 9) |

1.2 Relevant identified uses of the substance or mixture and the uses which are not recommended

Thermoplastic material intended for next processing by moulding or for direct use –

extruded polymethylmetacrylate (PMMA) sheets

Polymethylmetacrylate (PMMA) boards manufactured by extruding, in a form of large-area plates, from PMMA polymer and additives (colourful concentrates, UV stabilizer) which have no effect upon harmlessness of the product for health.

They are produced in both transparent and colourful design.

The product can be used for advertising purposes, glazing, production of covers and lighting fittings, forming,...

1.3 Data on the supplier

Manufacturer: Polycasa Slovakia s.r.o, M.R.Štefánika 71, 010 39 Žilina
Phone: 041 – 70714 11, Fax: 041 – 70714 17, www.polycasa.com

1.4 Emergency phone number

Emergency information: Toxicological Information Centre, Occupational Medicine and Toxicology Clinic FNŠP Acad.
L.Dérera, Limbova 5, 833 05 Bratislava
Phone: 02 – 54 77 41 66 Fax: 02 – 54 77 46 05

SECTION 2 Identification of hazards

2.1 Classification of the substance or mixture

Product type – **polymer**

The substance has not been classified as hazardous according to the Directive of the European Parliament and Council EC No. 1275/2008(CLP), Act of the Slovak Republic No. 67/2010 on the Conditions for Launching of Chemical Substances and Chemical Mixtures in the Market and on Modifications and Amendments of Some Acts (Chemical Act) and Classification Directives 67/548/EEC (DSD) and 1999/45/EEC (DPD).

The substance is not hazardous.

Polymethylmetacrylate boards have no acute or chronic unfavourable effects on human health under the conditions of normal use.

2.2 Identification elements

Not applicable

2.3 Other hazards

It may create drops at high temperatures and during fire and cause burns in case of contact with skin and eyes. Hazardous decomposition products such as carbon monoxide, carbon dioxide, methylmetacrylate, methylacrylate, smoke, soot and vapours are released during fire which may cause breathing problems.

SECTION 3 Composition/Information on ingredients

3.1 Substances

Polymethylmetacrylate (PMMA) boards produced by extruding in a form of large-area boards from PMMA polymer and additives (colourful concentrates, UV stabilizer) which have no effect upon harmlessness of the product for health. They are produced in both transparent and colourful design.

| | | | |
|-----------------------------------|---|-------------------|-------------------------------------|
| Polymethylmetacrylate - copolymer | >99% | CAS-No. 9011-14-7 | |
| Methylmetacrylate | <0.3% | CAS-No. 80-62-6 | EINECS-No. 201-297-1 R36/37/38, R43 |
| Methylacrylate | <0.1% | CAS-No. 96-33-3 | EINECS-No. 202-500-6 R36/37/38 |
| It contains: | UV stabilizers, colouring agents, pigments | | |
| Hazardous additives | None | | |
| Chemical name | - Polymethylmetacrylate | | |
| Chemical formula | - (C ₅ O ₂ H ₈) _n | | |
| CAS No. | - 9011-14-7 | | |
| EINECS or ELINEX No. | - The substance is a polymer according European Directives and registration according to EINECS is not required | | |

Classification according to the Directive 67/548/EEC or 1999/45/EC - not required

Classification according to the Directive of EP and Council EC No. 1272/2008 - not required

3.2. Mixtures

Not applicable

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SECTION 4 First aid measures

4.1 Description of the first aid measures

Dust particles and fragments may be released during work with the product

IN CASE OF INHALATION: Stop exposure and move the affected person on fresh air. Seek for medical attention in case of difficulties.

IN CASE OF CONTACT WITH SKIN: Disinfect wound in case of surface cutting and apply sterile bandage material. If the wound is more serious, seek for medical attention. Molten material may cause serious burns. NEVER attempt to remove molten polymer from skin! Cool the affected area with water and seek for medical attention.

IN CASE OF CONTACT WITH EYES: Remove irritating particles from eyes by rinsing with fresh water with eyelid kept open. Seek for medical attention in case of difficulties.

IN CASE OF SWALLOWING: Do not induce vomiting. Rinse mouth with fresh water. Seek for medical attention in case of difficulties.

4.2 Most significant symptoms and effects, both acute and delayed

They appear only scarcely and in only acute form

Symptoms: Cough, breathing difficulties, irritation of skin, lacrimation

4.3 Data on any need of immediate medical attention and specific treatment

Provision of symptomatic treatment

SECTION 5 Fire-fighting measures

5.1 Fire-fighting means

Extinguishing media: finely dispersed water, foam, powder or CO₂

5.2 Specific risks resulting from the substance or mixture

It burns with blue-yellow flame without production of smoke. The burning is accompanied with sweetish smell. The flame progresses slowly.

Material is melting and dropping when burning. Extinguished residue is brownish and contains bubbles.

Decomposition associated with releasing toxic and irritating products takes place as a result of temperatures exceeding 280°C.

5.3 Advice for fire-fighters

Fire-fighting protective equipment: Wear protection of breathing system and body in case of an intensive fire

Caution - material fragments may cause slipping. Edges of the product and fragments are sharp, there is a risk of cutting.

SECTION 6 Measures for accidental release

6.1 Personal safety measures, protective equipment and emergency procedures

In case of board breaking, sweep fragments and put them in a litter bin or a plastic bag. Wash contaminated area with water, use personal protective equipment.

Caution - material fragments may cause slipping. Edges of the product and fragments are sharp, there is a risk of cutting.

6.2 Safety measures for protection of environment

The product is not hazardous for environment.

6.3 Methods and material for prevention and cleaning

In case of board breaking, sweep fragments and put them in a litter bin or a plastic bag.

Wash contaminated area with water.

6.4 References to the other sections

See SECTION 4.

SECTION 7 Handling and storage

7.1 Safety measures for safe handling

Wear protective gloves when handling as the edges of the product are sharp and may cause cutting. Use protective equipment and recommended working procedures at processing (cutting, milling, polishing, etc.). Pay ultimate attention to work with hot material at thermal shaping.

Temperatures above 280°C result in degradation with production of vapours..

Do not eat, drink or smoke during work. Wash your hands with water and soap and apply a cream on them after work.

7.2 Conditions for safe storage including any incompatibilities

Extruded PMMA boards are protected against mechanical damage and dust from both sides with PE foil. They are supplied stacked on pallets with corresponding dimensions on PP underlay and wrapped in fixation foil and secured with binding tape. They are also stored in this package configuration. Storage areas should be clean, dry and cool with natural ventilation. Do not store close to heat sources.

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7.3 Specific final uses

The intended uses of this product are described in the SECTION: 1.2.

SECTION 8 Exposure control/Personal protection

8.1 Control parameters

| | | | | | |
|-------------------------|----------|-----------------------|-----------------------------|-----------------|----------------------|
| PMMA | -dust | 8 mg/m ³ | | | |
| Methylmetacrylate (MMA) | -vapours | 210 mg/m ³ | 50 ppm (ml/m ³) | CAS-No. 80-62-6 | EINECS-No. 201-297-1 |
| Methylmetacrylate (MA) | -vapours | 18 mg/m ³ | 5 ppm (ml/m ³) | CAS-No. 96-33-3 | EINECS-No. 201-297-1 |

8.2 Exposure control

Dust and vapours released during board processing should be removed from the production premises with hermetic sealing, local exhaustion and ventilation system so as to ensure not exceeding of the maximum acceptable limit of exposure (NPHV) in working environment.

It is necessary to wear personal protective equipment for protection of skin (working clothing, protective footwear, gloves), eyes (protective goggles) during work and where it is not possible to avoid exceeding of the specified NPVH, also for protection of respiratory system (dustproof respirator). Protective equipment must be kept in serviceable condition.

Do not eat, drink or smoke during work. Wash your hands with water and soap and apply a cream on them after work.

SECTION 9 Physical and chemical properties

9.1 Information on the basic physical and chemical properties

| | | |
|------------------------------------|--|----------------|
| Appearance | Large-area boards with thickness from 1.8 to 15 mm | |
| Colour | Transparent or colourful | |
| Odour | Odourless | |
| State | Solid substance | |
| Boiling point | No applicable | |
| Melting point | Not applicable | |
| Softening temperature | > 100 °C | ISO 306 |
| Decomposition temperature | > 280 °C | |
| Self-ignition temperature | > 425 °C | DIN 51794 |
| Fire supporting properties | None | |
| Classification of response to fire | E | STN EN 13501-1 |
| Specific weight | 1.19 g/cm ³ | ISO 1183 |
| Bulk density | Not applicable | |
| Solubility in water | Insoluble | |

9.2 Other information

Soluble in organic solvents.

The details mentioned above are informative; accurate values are mentioned in the separate document "Product Technical Specification".

SECTION 10 Stability and reactivity

10.1 Reactivity

The product is stable and without chemical reactivity under normal conditions

10.2 Chemical stability

The product resists to effects of water, detergents, diluted solutions of acids and alkalis diluted up to saturated salt solutions.

10.3 Possibility of hazardous reactions

None are known.

10.4 Conditions which should be avoided

Avoid thermal decomposition, overheating (> 280°C).

10.5 Incompatible materials

None are known.

10.6 Hazardous decomposition products

No hazardous products are created at normal method of use. Hazardous decomposition products such as carbon monoxide, carbon dioxide, methylmetacrylate, methylacrylate, smoke, soot and vapours are created in case of high temperature and burning.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

The product is not toxic and from the hygienic viewpoint, it is harmless for health, suitable for contact with food.

On the basis of current professional knowledge and our experience, the product is not hazardous for humans and has no unfavourable effects on human health if it is used correctly and processed in compliance with recommendations.

The substance is not subject to registration.

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| | |
|--|--|
| a) Acute toxicity | Not applicable |
| b) Skin corrosion/Skin irritation | It may cause irritation |
| c) Serious damage of eyes/Irritation of eyes | It may cause irritation of eyes and respiratory system |
| d) Respiratory or skin sensitization | Sporadic allergic skin reactions |
| e) Mutagenicity of germ cells | Not specified |
| f) Carcinogenicity effects | Not specified, the substance has no carcinogenic effects |
| g) Toxicity for reproduction | Not specified, the substance is not toxic for reproduction |
| h) Toxicity for a specific target organ (STOT) – single exposure | Not applicable |
| i) Toxicity for a specific target organ (STOT) – repeated exposure | Not applicable |
| j) Aspiration hazard | Not applicable |

SECTION 12 Ecological information

The product is not considered to be hazardous for environment. The product is virtually insoluble in water, extracts in water are negligible, they have no negative effect on water quality, they are not toxic with respect to fish and other organisms. They do not represent any risk for quality of soil and water.

| | |
|--|----------------------------|
| 12.1 Toxicity | The substance is not toxic |
| 12.2 Persistence and decomposability | No data available |
| 12.3 Bioaccumulation potential | No data available |
| 12.4 Mobility in soil | Insoluble in water |
| 12.5 Results of PBT and vPvB assessment | No data available |
| 12.6 Other unfavourable effects | Not applicable |

SECTION 13 Disposal consideration

13.1 Methods of waste disposal

The product is recyclable. The material can be crushed and processed again in case of correct handling. Waste which cannot be processed by recycling can be re-processed by de-polymerization to the basic monomer. The product can be disposed of by landfilling or incineration in compliance with local legislation. Waste handling is governed by the Act No. 409/2006 which modifies and amends the Act No. 223/2001 Coll. on Wastes in the Slovak Republic. PMMA waste (scrap, sawdust, etc.) can be, in accordance with the Regulation of the Ministry of Environment of the Slovak Republic No. 284/2001 as amended, classified in the **"Other waste" category with the catalogue number 07 02 13**.

SECTION 14 Transport information

| | |
|---|---------------------|
| 14.1 UN number | Not applicable |
| 14.2 Correct shipment UN identification | Not applicable |
| 14.3 Class(es) of risks for transport | Not applicable |
| 14.4 Packing group | Not applicable |
| 14.5 Risks for environment | It is not hazardous |
| 14.6 Personal safety measures for the user | SECTIONS 4 to 8 |
| 14.7 Transport of bulk loads according to Annex II to MARPOL 73/78 Treaty and IBC Code | Not subject to |

SECTION 15 Regulatory information

15.1 Directives/Legal regulations specific for the substance or mixture in the field of safety, health and environment

Not required
The duty of authorization according to Section VII does not apply to the product/substance and the restrictions according to Section VIII are not applicable

The information contained in this document has been processed on the basis of the directives, regulations and acts listed below.

European Union

Directive of the European Parliament and Council (EC) No. 1907/2006. Directive of the European Parliament and Council (EC) No. 1907/2006 of December 18, 2006 on Registration, Assessment, Authorization and Limitation of Chemical Substances (REACH) and on Establishment of the European Chemical Agency, on Modifications and Amendments of the Directive No. 1999/45/EC and on Cancellation of the Directive of the Council (EEC) No. 793/93 and Directive of the Commission (EC) No. 1488/94, Directive of the Council No. 76/769/EEC and Directives of the Commission 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC; Directive of the European Parliament and Council (EC) No. 1272/2008 of December 16, 2008 on Classification, Identification and Packing of Substances and Mixtures, on Modifications and

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Amendments of the Directives 67/548/EEC and 1999/45/EC and on Modification and Amendment of the Directive (EC) No. 1907/2006; DIRECTIVE OF THE COMMISSION (EC) No. 790/2009 of August 10, 2009 through which the Directive of the European Parliament and Council (EC) No. 1272/2008 on Classification, Identification and Packing of Substances and Mixtures is modified and amended for the purpose of adaptation to technical and scientific progress; DIRECTIVE OF THE COMMISSION (EC) No. 286/2011 of March 10, 2011, through which the Directive of the European Parliament and Council (EC) No. 1272/2008 on Classification, Identification and Packing of Substances and Mixtures is modified and amended for the purpose of adaptation to technical and scientific progress; Act No. 67/2010 Coll. on Conditions for Launching of Chemical Substances and Chemical Mixtures in the Market and on Modifications and Amendments of Some Acts (Chemical Act); DIRECTIVE OF THE COMMISSION (EC) No. 453/2010 of May 20, 2010 through which the Directive of the European Parliament and Council (EC) No. 1907/2006 on Registration, Assessment, Authorization and Limitation of Chemical Substances (REACH) is modified and amended;

Slovak Republic

Decree of the Ministry of Economy of the Slovak Republic No. 3/2010 through which details on general requirements for classification, identification and packing of hazardous substances and mixtures are specified; Directive of the Government No. 355/2006 Coll. on Protection of Employees against Risks Associated with Exposure to Chemical Factors during Work as amended; Act No. 409/2006 Coll. on Wastes and on Modifications and Amendments of Some Acts.

15.2 Assessment of chemical safety

In accordance with the EU directives, the product has not classified as hazardous for delivery and use; no identification is mandatory.

SECTION 16 Other information

Modified items - SECTION 1 – 16 change of design

R phrases (risk phrases) = H phrases (warning notices) - they do not apply to the product

S phrases (safety phrases) = P phrases (safety notices) - application of S16, S22 – P210, P281, P410

| | |
|------------------|--|
| P210 | Keep out of reach of heat/sparks/open flame/hot surfaces. Do not smoke |
| S16 | Keep out of reach of ignition sources - No smoking |
| P281 | Use the specified personal protective means. |
| S36/37/39 | Wear suitable protective clothing, protective gloves and protective goggles or protective shield |
| P410 | Protect against sunshine |

The employer must ensure access to the information contained in the safety data sheet for all employees who work with this product or use it or are exposed to its effects as well as for the representatives of such employees in accordance with Clause 35 of the Directive of the European Parliament and Council (EC) No. 1907/2006.

The aim of the safety data is to allow the users to adopt necessary measures associated with health protection and workplace safety and environment protection. The data is based on the current status of our knowledge; however, it does not represent any guarantee of product properties and do not imply any contractual legal relationship.

Please read the technical specification of the product available by request carefully before any use or processing of the product.