TECHNICAL DATA SHEET

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Transacryl

SECTION 1: Product Description, Applications, Supplier

Product Description

PMMA (polymethylmethacrylat Co-Polimer)

Applications

Transacryl is an Impact Modified Acrylic with tremendous creative value. Ideal for backpainting, backlighting and 3-dimensional engraving effects.

Details of the supplier of the technical data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

ECKART SIGNPLASTICS GMBH
Technologiepark 10-12
91522 Ansbach
Germany
phone: +49 (0) 981 / 48 75 5-0
fax: +49 (0) 981 / 48 75 5-22
e-Mail: info@eckartgmbh.de
web site: www.eckartgmbh.de

SECTION 2: Hazards identification

This material is not hazardous under normal conditions.

SECTION 3: Composition / information on ingredients

Polymethylmethacrylat Co-polymer

SECTION 4: First aid measures

Inhalation: At high temperature, products of thermal decomposition can be irritating to respiratory system. Remove person into fresh air.

Skin contact: Contact with the product, when handled at high temperatures, can cause serious burns. Cool with cold water and remove it with vegetable oil or paraffin.

Eye contact: Possible irritation of eyes (Physical effect of dust). Wash with clean water for 15 minutes holding the eyelids open. If eye irritation persists, consult a doctor.

Ingestion: If swallowed, rinse mouth with plenty of water. Never give fluids or induce vomiting to an unconscious person.

SECTION 5: Fire Fighting Measures

Fire and explosive properties

Suitable extinguishing media recommended:
Water spray, Dry powder, Carbon dioxide (CO2)

Protective equipment:
Use self-contained breathing equipment independent from circulating air and protective clothes.
The material is flammable and burns vigorously with intense heat.

Special fire fighting methods:
Cool with sufficient water and prevent re-ignition.

Particular risks arising from product/products of combustion/generated gases:
When burned the following substances can be formed: Carbon monoxide (CO), carbon dioxide (CO2), methyl acrylates, acrylates, styrene.

SECTION 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Avoid contact with the skin and the eyes. Avoid breathing dust. Wear protective equipment.

Environmental precautions

Do not release into the environment. Do not let product enter drains. Transfer scrap material to suitable container for proper disposal. Use a waste incinerating plant for disposing.

Methods and material for containment and cleaning up

Retrieve mechanically.

SECTION 7: Handling and Storage

Handling

Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.
Avoid contact with skin, eyes and inhalation of vapors.

Remove all sources of ignition. Take precautionary measures against static discharges. Avoid the formation and deposition of dust.

Remove protection foil before use.

Storage

Remove all sources of ignition. Store away from heat, moisture and electrostatic charge.

Incompatible products:	Strong oxidizing agents, Deoxidizers, Bases
Packaging material:	Polyethylene, Cardboard lined with polyethylene liner In bulk: Stainless steel

SECTION 8: Exposure Control / Personal Protection

Ensure that there is adequate ventilation. Local exhaust ventilation should be provided for high temperature processing to avoid possible exposure to vapors.

Eye protection:	protective goggles
Skin protection:	protective clothes
Respiratory protection:	in the case of thermal processing or inhalation of vapors cannot be prevent wear suitable respiratory equipment

SECTION 9: Physical and Chemical Properties

	DIN	ISO	ASTM	UM	WERT
General Characteristics					
Specific gravity	53479	1183	D792	g/cm	1.15
Water absorption	53492	62	D570	%	0.36
Mechanical properties					
Tensile strength	53455	527	D638	MPa	38
Ultimate elongation	53455	527	D638	%	35
Rockwell hardness	/	2039	D785	/	M 42
Impact strength (Charpy unnotched)	53453	179	/	KJ/m	50
Impact strength (IZOD notched)	53453	180	D256	J/m	58.5

Optic properties

Refractive index B	53491	489	/	/	1.49
Transmittance	5036	/	/	%	90

Thermic properties

Flash point				°C	> 250
Auto-ignition temperature				°C	ca. 430
Decomposition temperature				°C	> 280
Vicat heat stability B/50	53460	306	D1525	°C	88.5
HDT under load -1,82 MPa	53461	75	D648	°C	84,5
Coefficient of thermic expansion	53752	/	/	10^{-6} K	100

Technical characteristics

Material:	Impact Modified Acrylic
Temperature resistance	from - 30°C to + 80°C
Scratch resistance	Internal Test with Sclerometer (value = 300 g)
Solubility:	Insoluble: in water soluble in: Aldehydes, chlorinated solvents, Aromatic solvents, Ketones, Esters
Outdoor Use:	Yes
Indoor Use:	yes
Fire resistance:	UL94 method - HB-class - 062
Odour:	Odourless
Engraving method:	Pantograph, Laser
Engraving depth:	0,3 mm (0,5 mm for gold/silver)

Aesthetic characteristics

Top finish:	Glossy, Matt
Surface finish:	Without any hole, inclusion, scratch, according to the approved sample
Contaminations:	N° 01 ≤ 1 mm N° 01 ≤ 0,5 mm N° 03 ≤ 0,2 mm

Geometrical characteristics

Sheet dimensions:	1220 x 610 mm (tolerance +/- 0,2%) edges at right angles
Total thickness:	0.5, 0.8, 1.5 mm (tolerance +/- 0.1 mm) 3.2 mm (tolerance +/- 0.2 mm)
Thickness of the top:	0,1 – 0,2 mm (tolerance +/- 0,03 mm)

UV Colour resistance

The lowest value measured according to the “blue colour scale” is:
4/5 for the coloured sheets
4 for the metals sheets
The tests have been made in QUV.

Resistance to varnish and similars

+ Non aromatic petrol
o Pure oil paints
o Inks and varnish for acrylic glass
- Nitro varnish
- Diluent, in general

Resistance to chemical agents, solvents

+ Acid for accumulators	+ Sodium bisulphite	- Amylacetate
+ Alum	+ Sodium carbonate	- Aniline
+ Aluminium chloride	+ Sodium chlorate	- Acetic acid, concentrated
+ Aluminium oxalate	+ Sodium chloride	- Acetone
+ Aluminium sulphate	+ Sodium hypochlorite	- Benzaldehyde
+ Ammonium sulphate	+ Sodium sulphate	- Benzol
+ Aqueous zinc sulphate	+ Sodium sulphide	- Bromine
+ Arsenic	+ Solid zinc sulphate	- Butanol
+ Arsenic acid	+ Stannous chloride	- Carbon sulphide
+ Calcium chloride	+ Stearic acid	- Carbon tetrachloride
+ Calcium hypochlorite	+ Sulphur	- Chloroethylether
+ Calcium milk	+ Sulphuric acid, up to 30%	- Chlorophenol
+ Caustic potash	+ Sulphurous acid up to 5%	- Concentrated ethanol
+ Caustic soda	+ Sulphuryl chloride	- Concentrated methanol
+ Citric acid, up to 20%	+ Tartaric acid up to 50%	- Diacetonic alcohol
+ Diethylenglicol	+ Triethanolamine	- Dibutilfphalate
+ Ferric chloride	+ Trycresil phosphate	- Dioctilfphalate
+ Ferrous chloride	+ Oxygenized water up to 40%	- Dioxane
+ Formic acid, up to 20%	+ Uric acid up to 20% or chlorwater	- Ether
+ Glycerine	o Acetic acid up to 25%	- Ethyl acetate
+ Glycol	o Ammonia	- Ethyl bromide
+ Heptane	o Butyric acid up to 5%	- Ethyl butyrate
+ Hexane	o Chromic acid	- Ethylene bromide
+ Hydrogen peroxide up to 40%	o Ciclohexanole	- Hydrocarbon chlorate
+ Iron vitriol	o Concentrated sulphurous acid	- Lactic acid butylester
+ Lactic acid, up to 20%	o Cyclohexane	- Liquid chlor
+ Magnesium chloride	o Diamylphtalate	- Liquid sulphurous anhydride
+ Magnesium sulphate	o Ethanol, up to 30%	- Methylethylketone
+ Manganese sulphate	o Formic acid, up to 40%	- Nitric acid, over 70%
+ Mercury	o Hydrochloric acid	- Perchloroetyhylene
+ Metallic iodine	o Hydrofluoric acid up to 20%	- Phenol
+ Monobromic naphthalene	o Hydrogen peroxide over 40%	- Phosphorous trichloride
+ Nichel sulphate	o Isopropylic alcohol	- Pyridine
+ Nitric acid, up to 20%	o Methanol, up to 30%	- Silicon tetrachloride
+ Octane	o Nitric acid, from 20 to 70%	- Spirit
+ Oil turpentine	o Oil	- Thionyl chloride
+ Oxalic acid	o Oxygenized water over 40%	- Toluol
+ Petroleum ether	o Substitute turpentine	- Trichloroacetic acid
+ Phosphate		- White Phosphor
		- Xylol

+ Potassium carbonate
+ Potassium chloride
+ Potassium dichromate
+ Potassium nitrate
+ Potassium permanganate
+ Potassium cyanide
+ Propyl
+ Pure petrol
+ Silver nitrate
+ Soapy water
+ Soda
+ Sodium acetate 32%

+ = resists o = it resists relatively - = it doesn´t resist

SECTION 10: Stability and Reactivity

Transacryl is UV stable and tested against aging under extreme conditions. It retains a brilliant surface for a long period of time, as well as its physical properties. The material is free of halogens, silicones and asbestos.

The product is stable under normal handling and storage conditions.

Avoid temperature > 260°C for long periods to avoid slow dissolution. At high temperature products of thermal decomposition can be irritating to respiratory system.

Contact with certain acids and base salts as well as certain oxidizing agents should be avoided.
Protect from light, moisture, heat, flames and sparks.

> 280°C acrylic vapors can be released: methyl acrylates, acrylates, styrene, hydrocarbons.

SECTION 11: Toxicological information

See section 4.

SECTION 12: Ecological Information

The product does not pose a significant risk to the environment. It is not biodegradable.

SECTION 13: Disposal Considerations

Recycle or destroy by incineration (in accordance with local and national regulations).

SECTION 14: Transport Information

Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Other information

The above state information is based on the present state of knowledge and experience. The data sheet describes products in respect of safety requirements. This information cannot be considered as a quality or product warranty. The product is suitable only for the above mentioned standard usage parameters.

The manufacturer declines any responsibility in case of improper use of the product when the product is exposed to stresses exceeding the values stated herein.