

SAFETY DATA SHEET



According to 91/155/ECC (state: 2001/58/EC, 2nd update of 91/155/ECC) and SDBV (CH)

PLR-CRYL Cold Plastic FP-2K White 10

Date of last issue: 2005-07-28

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1. Chemical Product and Company Identification

Product name : PLR-CRYL Cold Plastic FP-2K White 10

Application : Road marking material

Manufacturer/Supplier : PLASTIROUTE GmbH, Renkenrungsstraße 16, 79379 Müllheim/Baden

Phone : +49 7631 3687-0 Fax : +49 7631 3687-36

Information available from : R & D Div. : Dr. Magenheimer Laboratory : Dr. Schumacher-Wandersleb

Emergency telephone : Phone 1 : +49 7631 3687-13 Phone 2 : +49 7631 3687-14

Poison centres : Switzerland : +41 12515151 Germany : +49 761 19240

2. Composition / Information on Ingredients

Chemical properties of the product:

Road marking material based on acrylic monomers and polymers

Hazardous ingredients: According to EC-directive 67/548/ECC

EC-no.	CAS-no.	Description	% w/w	Symbol(s)	Risk-phrase(s)	GK
201-297-1	80-62-6	Methylmethacrylate [MMA]	3 – 8	Xi F	11-37/38-43	4
205-480-7	141-32-2	n-Butylacrylate [n-BA]	6 – 12	Xi ---	10-36/37/38-43	4
221-359-1	3077-12-1	Dioethyl-p-toluidine	0.1 – 0.3	Xn ---	22-41	n. i.
202-805-4	99-97-8	N,N-Dimethyl-p-toluidine	0.1 – 0.3	T ---	23/24/25-33-52/53	2

Full text of the risk-phrase(s) / hazard(s) identification and hazard symbol(s) see point 16.

3. Hazards Identification

Hazards : Danger symbol(s) Hazard indication(s)
Xi Irritating substances R 10 Flammable.
R 36/37/38 Irritating to eyes, respiratory system and skin.
R 43 May cause sensitization by skin contact.

Special directives for humans and environment : **Inhalation** of vapours or aerosols can result in headache, nausea, irritation of nose, throat and lungs. Reaction time and coordination faculties may be influenced.
Direct eye contact (paint splash) can provoke irritation of the conjunctiva. Vapours can provoke a slight eye irritation.
Repetitive or continuous skin contact may result in degreasing the skin and provoke skin irritation, sensitization is possible.

4. First Aid Measures

General : If symptoms occur get medical aid. In case of unconsciousness, no oral medication to be given.
Inhalation : Move to fresh air. Position the victim in a relaxed position and keep warm. In case of irregular or stopped breathing give artificial respiration. In case of unconsciousness, position victim sideways and get medical assistance.
Skin : Take off spoiled clothes. Wash affected skin areas thoroughly with soap and water using an appropriate skin cleaning product. Do not use solvents or solvent based cleaning products! After cleaning apply skin cream. On irritation of skin get medical advice.
Eye : Take off contact lenses, if any. Protect the good eye. Keep the eyelid of damaged eye open and rinse with fresh water during 10 minutes. Get medical advice.
Ingestion : If swallowed, rinse mouth and give two glasses of water to drink. Do not provoke vomiting. Keep person calm. Get medical advice.

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5. Fire-Fighting Measures

- Extinguishing media : Foam (alcohol resistant), carbondioxide, extinguishing powder, waterspray (water).
Unsuitable extinguishing media : Water jet.
Special exposure hazards : In case of fire, formation of thick black smoke.
Inhalation of decomposed products can affect health seriously.
Protective equipment : Gas mask and breathing equipment required.
Other information : Closed containers near fire need to be cooled with water.
Do not empty extinguishing water into drains, lakes and rivers or into the soil.

6. Accidental Release Measures

- Personal precautions : Keep away from sources of ignition and ventilate the room well. Do not inhale vapours, use respiration protection equipment if necessary. Avoid skin and eye contact.
Observe protection rules (see point 7 and 8).
Environmental precautions : Do not dispose/empty product into drains, lakes and rivers or into the soil. If rivers, lakes, drains or soils have been polluted, the corresponding officials have to be informed according to the prevailing laws.
Methods for cleaning up : Spoiled product to be absorbed by using sand, soil, vermiculite, silica etc. and to be disposed of in the corresponding containers at the local waste collecting station. Preferably clean with an appropriate cleaning product. Avoid using solvents for cleaning.

7. Handling and Storage

Handling

- Directives for safe handling : The product contains flammable organic substances. Keep away from sources of ignition and ventilate the room well during application. Before pouring products into other containers earth all metallic parts. It is highly recommended to wear antistatic clothing and shoes. Also use spark-safe tools.
Avoid skin and eye contact. Do not inhale fumes and vapours. Do not eat, drink or smoke when working.
Wear personal protection equipment, see point 8.
Observe safety and protection rules.

- Directives for fire and explosion protection : Keep away from sources of ignition – Do not smoke. Take precautionary measures against static discharges. In the case of fire, cool exposed containers/drums with water.

Storage

- Requirements for storerooms and containers : Storerooms have to be explosion safe and equipped according to the national prescriptions and laws. Observe the official protection and safety rules (fire prevention rules, see point 15).
Store always in the original containers/drums and not below 0 °C and not above 25 °C for a longer time. Keep containers/drums always tightly closed. Do not empty containers/drums with pressure. Do not smoke. No access allowed for non-authorised persons. Opened containers/drums to be closed carefully and stored in upright position to avoid leakage. Container to be filled only up to 80 %, oxygen from air is needed to stabilize the material against polymerization.
Indication for combined storage : According to VCI Storage Concept, the combined storage of the following storage classes is not authorised: 1, 2A, 4.1A, 4.1B, 4.2, 4.3, 5.1A, 5.1C, 5.2, 6.1B and 6.2.
Additional Information for storage conditions : Store always in the original containers/drums. Observe label indications.
Store at a cool, dry and well ventilated place. Protect from heat, direct sun and frost. Keep away from sources of ignition. Observe the legal storage rules.
Storage recommendations : Storage class 3A according to VCI Storage Concept

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8. Exposure Controls and Personal Protection

Technical protection measures:

Provide good ventilation. Room ventilation can be obtained by local or room ventilation. If such ventilation is not sufficient, the appropriate respiration/protection masks to be used.

Specific threshold values for ingredients with regard to worker's health and safety:

EC-no.	CAS-no.	Description	GK (CH)	% w/w	Type	Value	Unit
201-297-1	80-62-6	Methylmethacrylate [MMA]	4	3 – 8	MAK	210	mg/m ³
205-480-7	141-32-2	n-Butylacrylate [n-BA]	4	6 – 12	MAK	11	mg/m ³

The indicated limits are established on the valid SUVA publication (CH) "Value Limits Measured at the Working Station", (1903.d/f) resp. on the TRGS 900 (D). For other countries the values can be obtained at the respective country's lists. For the evaluation of product mixtures in air at working stations refer to TRGS 403.

Personnel protection equipment

- Respiratory : When reaching the exposure limits, a gas mask must be used, filter A.
- Hand : Solvent resistant protection gloves. For longer exposure and frequent use, a protection cream to be applied on hands. Observe the recommendations of the protection cream manufacturer.
- Eye : Use only approved safety goggles.
- Skin and body : Wear antistatic clothing made of natural fibres (cotton) or heat-resistant synthetic fibres. After being in contact with product, wash hands with soap and water or use an appropriate cleaning solution. Do not use organic solvents for cleaning.
- Keep away from food, drink and animal feed.

9. Physical and Chemical Properties

Appearance/colour : pasty, white

Odour : typical for acrylic esters

	Value	Unit	Method		Value	Unit	Method
Boiling point	38 - 188	°C	DIN 51751	Density (20°C)	1.85 ± 0.05	g/cm ³	DIN 53217/2
Flash point	29	°C	ASTM D6450				
Ignition point	275	°C	DIN 51794	Viscosity (20°C)	pasty	s	DIN EN ISO 2431
Solvent content	n. e.	% w/w					
Explosion limits			DIN 51694	Vapour pressure			prEN 13016-1
Lower limit	1.1	% v/v		20°C	2.8	kPa	
Upper limit	12.5	% v/v		50°C	< 50	kPa	

10. Stability and Reactivity

- Conditions to avoid : When observing the recommended storage- and handling conditions, the product remains stable (see point 7).
- Materials to avoid : Keep clear from radicals (peroxides), reducing substances as well as from heavy metals to avoid exothermic polymerisation reactions.
- Hazardous decomposition products : At high temperatures evolution of dangerous decomposition products such as carbon dioxide, carbon monoxide, smoke is possible.

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11. Toxicological Information

Acute toxicity, oral	: LD ₅₀	rat	(Methylmethacrylate)	7,872 mg/kg
	: LD ₅₀	rat	(n-Butylacrylate)	900 mg/kg
	: LD ₅₀	rat	(N,N-Dimethyl-p-toluidine)	1,650 mg/kg
Acute toxicity, inhalation	: LC ₅₀	rat, 4h	(Methylmethacrylate)	7,093 ppm
	: LC ₅₀	rat, 4h	(n-Butylacrylate)	2,730 ppm
	: LC ₅₀	rat, 4h	(N,N-Dimethyl-p-toluidine)	1.5 mg/l
Acute toxicity, dermal	: LD ₅₀	rabbit	(Methylmethacrylate)	> 5,000 mg/kg
	: LD ₅₀	rabbit	(n-Butylacrylate)	> 1,800 mg/kg
	: LD ₅₀	rat	(N,N-Dimethyl-p-toluidine)	> 2,000 mg/kg
Irritation, skin	: irritating			
Irritation, eye	: irritating			
Sensitization	: Sensitization tests with guinea pigs gave partly positive partly negative results. Humans show different allergic reactions to <u>MMA</u> (symptoms: headache, irritation of the eyes).			
Toxicity on continuous doses:	: Inhalation, 2 years, rat 250 – 1,000 ppm, mouse 500 – 1,000 ppm, results: irritation of mucous membrane of nose, throat and lungs, degeneration of the olfactory epithelium (<u>MMA</u>).			
Mutagenicity	: In vivo report of partly positive partly negative effects (<u>MMA</u>).			
Genotoxicity	: No experimental indications of genotoxicity in vivo found (<u>MMA</u>).			
Carcinogenicity	: Not carcinogen on inhalation or feeding of rats, mice and dogs (<u>MMA</u> and <u>n-BA</u>)			
Toxicity on reproduction/teratogenicity	: During tests with animals no toxicity on reproduction found (<u>MMA</u>).			
Other toxicological information	: <u>Practical reference information</u> The inhalation of fumes above the MAK-threshold values can damage your health by irritating mucous membrane and respiration organs, inner organs as well as the nervous system. Symptoms are headache, nausea, tiredness, muscular weakness, drowsiness and in some cases unconsciousness. Extended and repeating contact with the product can degrease the skin and can provoke non-allergic skin damages (contact dermatitis) and/or harmful substance absorption. Splashes of the product in eyes causes irritation and may damage the conjunctiva. <u>General remarks</u> The product is not tested as such, but classified according to the EC-directive 1999/45/EC and the Swiss Law for Toxic Agents. For details see point 2 and 15.			

12. Ecological Information

There is no information on this product.

Ecotoxicity of the ingredients (see also point 2):

	MMA	n-BA
Acute toxicity, mammal	1.0	1.0
Acute toxicity, fish	3.5	4.6
Acute toxicity, bacteria	4.0	4.1

Not to be disposed into drains, rivers and lakes or into the soil.

Environmentally dangerous (N) substances: none

EC-no.	CAS-no.	Description	% w/w	Risk-phrase(s)

Full text of the risk-phrase(s) see point 16.

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13. Disposal Considerations

Product solid waste : EWC-no. : 08 01 12 VVS-code (CH) : 16 32
Name (acc. to 2001/118/EC) : Waste of paints and varnishes except those listed under 08 01 11*.
Product sludge : EWC-no. : 08 01 11* VVS-code (CH) : 16 20
Name (acc. to 2001/118/EC) : Waste of paints and varnishes which contain organic solvents or other hazardous materials.
Packaging cleaned : EWC-no. : 15 01 02
Name (acc. to 2001/118/EC) : Packing made of plastic
EWC-no. : 15 01 04
Packing made of metal
Contaminated packaging : EWC-no. : 15 01 10* VVS-code (CH) : 30 40
Name (acc. to 2001/118/EC) : Packing containing residues of hazardous materials or being contaminated with hazardous materials.

Waste has to be disposed or to be recycled according to the national and regional laws. Contaminated packaging is considered as toxic waste and has to be disposed of accordingly.

14. Transport Information

Transports only according to the transport law for roads (ADR), railways (RID), shipping (IMDG) and air (ICAO/IATA)

ADR/RID	: Class	: 3	Classific. code	: F1	UN-no.	: 1263
	Packaging group	: III	Special instr.	: 163, 640H, 650	Ltd. Qty.	: LQ7
	Proper shipping name	: PAINT			Hazard-no.	: 33
IMDG	: Class	: 3	Stow category	: A	UN-no.	: 1263
	Packaging group	: III	Special instr.	: 163, 223, 944, 955	Ltd. Qty.	: 5 L
	Marine pollutant	: no	MFAG-table	: 7 – 10	EmS	: F-E, S-E
	Proper shipping name	: PAINT				
ICAO/IATA	: Class	: 3			UN-no.	: 1263
	Packaging group	: III	ERG	: 3L		
	Proper shipping name	: PAINT				



15. Regulatory Information

Labelling according to EC-directives

The preparation is according to EC-directive 1999/45/EC considered as dangerous (flammable, irritating).

Hazard symbol(s)

Xi Irritating substances



Risk – phrase(s)

R 10 Flammable.
R 36/37/38 Irritating to eyes, respiratory system and skin.
R 43 May cause sensitization by skin contact.

Safety – phrase(s)

S 16 Keep away from sources of ignition – No smoking.
S 24 Avoid contact with the skin.
S 33 Take precautionary measures against static discharges.
S 51 Use only in well-ventilated areas.

(to be continued)

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15. Regulatory Information – (continuation)

National directives

Indications for employment : Observe the Mother and Youth Protection Law.

Classification of toxicity (CH) : Toxicity class (GK): free BAG T no. : 619 000 Observe label.

Air protection law : LRV-class (CH) : 1 : $\leq 13^{1)}$ % 2 : $\leq 8^{2)}$ % 3 : --- %

Air pollution control : TA-Luft (D) : I : $\leq 13^{1)}$ % II : $\leq 8^{2)}$ % III : --- %

Fire protection : BVD-class (CH) : n. i. BetrSichV (D) : Flammable

Pollution of water : WGK (CH) : 2 WGK (D) : 1 (self-classification)

¹⁾ n-Butylacrylate + N,N-Dimethyl-p-toluidine, ²⁾ Methymethacrylate

16. Other Information

Full text of the R-phrases / hazards identification / explanation of hazard symbols see point 2 and 12.

Hazard symbol(s) Indication of danger

F Flammable substances

Xi Irritating substances

Xn Harmful substances

T Toxic substances

Risk – phrase(s) Denomination of special dangers, danger indications

10 Flammable.

11 Highly flammable.

22 Harmful if swallowed.

23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

33 Danger of cumulative effects.

36/37/38 Irritating to eyes, respiratory system and skin.

37/38 Irritating to respiratory system and the skin.

41 Risk of serious damage to eyes.

43 May cause sensitization by skin contact.

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Abbreviations

MAK Specific threshold values for ingredients with regard to worker's health and safety (D)

GK Toxicity class (CH)

BAG T Federal Health Agency (CH) Toxicity class

LRV Clean Air Amendment (CH)

WGK Class of water hazardous materials (CH/D)

The product is chemically stabilized. It can polymerize in an exothermic reaction when stored over the guaranteed time and/or at high temperatures.

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for this special use of this product.