

SAFFTY DATA SHFFT

IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Name	COLACRYL™ PD12, TS1779
Product Description	Polymer blend based on Methyl methacrylate and n-Butyl methacrylate containing peroxide.
Identified use(s)	Manufacture of dental and medical products.
Uses advised against	None known.
Manufacturer	Mitsubishi Chemical UK Limited, Specialty Polymers and Resins, Horndale Avenue, Newton
	Tel: ± 44 (0)1325 300000
	mcm.sdsinfo@mcgc.com
Emergency Phone No.	+44 (0) 1642 452461
2. HAZARDS IDENTIF	ICATION

Hazard classification

2.

Combustible dust

Label elements Signal word Hazard statement(s) Other hazards

Warning May form combustible dust concentrations in air. Low toxicity under normal conditions of handling and use.

COMPOSITION/INFORMATION ON INGREDIENTS 3

Chemical identity of the substance

Polymer blend based on Methyl methacrylate and n-Butyl methacrylate containing peroxide.

Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below.

Substance identity	%W/W	CAS No.
Dibenzoyl peroxide	<1	000094-36-0
Methyl methacrylate	<1	000080-62-6
n-Butyl methacrylate	<1	000097-88-1

Δ FIRST AID MEASURES

Description of first aid massures

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical
attention. Molten material can cause severe burns. Do NOT try to peel molten polymer from
the skin. Cool rapidly with water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if
present and easy to do. Continue rinsing.
IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Obtain medical attention if ill
effects occur.

Most important symptoms and effects, both acute and delayed Not applicable.

Indication of any immediate medical attention and special treatment needed Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Unsuitable Extinguishing Media Special hazards arising from the substance or mixture Water spray, foam, dry powder or CO₂. Do not use water jet. Combustible but not readily ignited. May form combustible dust concentrations in air. The minimum ignition temperature of a dust cloud of a similar polymer has been measured at approximately 896°F (480°C) (IEC 1241-2-1). Combustion or thermal decomposition will evolve toxic, irritant and flammable vapours. A self contained breathing apparatus and suitable protective clothing should be worn in fire

Special protective equipment and precautions for fire fighters

A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Caution - spillages may be slippery.
Environmental precautions	Avoid release to the environment.
Methods and materials for containment and	Collect in containers for disposal using approved dust respirator.
cleaning up	
Other advice	See Section: 8, 13

. HANDLING AND STORAGE

HANDLING

STORAGE

Process Hazards

Do not eat, drink or smoke at the workplace. Product as supplied: Avoid contact with skin and eyes. Unlikely to represent a dust hazard under normal handling conditions. Dental resins are usually processed in conjunction with reactive monomers and this may require the use of a higher level of PPE than that necessary for the polymer itself. Please also see the advice in Sections 8 and 11.

The following constitutes general advice: Extra care should be taken to prevent burns from contact with hot material. Thermal processing requires adequate ventilation to remove any monomer decomposition products, and use of inert atmosphere may be required in some processes to safely decompose the resin when it is used as a binder. Any thermal processing must consider the time-temperature decomposition of the resin. All polymers degrade to some extent at their processing temperature, an effect which increases with increasing temperature. It is therefore impossible to be precise about which substances may be evolved. However, it is only the minor components which vary substantially. The major components are given in Section 10. If the product is to be used in applications for which the hazards are not fully understood it is recommended to consult the supplier before use. Acrylic polymers are supplied in either bags or bulk containers. Keep containers in a clean, cool and dry area away from heat sources. Natural ventilation is adequate. Preferably not exceeding 104°F (40°C).

Polymer contains residual benzoyl peroxide. This may react with oxidising agents, reducing agents, acids, bases and amines leading to decomposition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Storage temperature (°C):

Incompatible materials:

Substance	CAS No.	OSHA PEL	ACGIH	ACGIH	Company Std.	Company
		TWA	TWA	STEL	TWA	Std.
						STEL
Particulates (Total dust)		15 mg/m³	15 mg/m³			
(Respirable dust)		5 mg/m³	5 mg/m³			
Dibenzoyl peroxide	000094-36-0	5 mg/m³	5 mg/m³(A4)			
Traces of: Aluminium oxides	001344-28-1					
inhalable dust			10 mg/m³			
respirable dust			3 mg/m³ *			
The following values apply to substances						
which may be evolved during thermal						
processing.						
Methyl methacrylate	000080-62-6	100 ppm	50 ppm	100 ppm	50 ppm	100 ppm
		410 mg/m ³	(205 mg/m³)	(410 mg/m³)		
				(SEN;A4)		
n-Butyl methacrylate	000097-88-1	Not	Not	Not	50 ppm	100 ppm
		established	established	established		

Appropriate engineering controls

Do not eat, drink or smoke at the workplace. Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded. Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required. The following information is given as general guidance.

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

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Wear eye/face protection. Safety spectacles/goggles/full face shield.

Skin protection



Wear suitable gloves.

Suitable materials: Butyl; EN 374.

Suitability of gloves should be confirmed with glove manufacturer. Change gloves, if contamination occurs or duration of activity exceeds breakthrough time. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Respiratory protection



A suitable dust mask or dust respirator with filter type P3 or FFP3 (EN143 or EN149) may be appropriate. In the unlikely event of formation of particularly high levels of dust a self contained breathing apparatus may be appropriate.

Thermal hazards

Wear thermal insulating gloves when handling hot masses.

Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. A suitable mask with filter type A (EN141 or EN405) may be appropriate. In the unlikely event of formation of particularly high levels of vapour a self contained breathing apparatus may be appropriate.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form Color Odour Odour Threshold (ppm) Melting Range (°C) Boiling Point (°C) Flammability (solid, gas) Flammable Limits Flash Point (°C) Auto Ignition Temperature (°C) Decomposition Temperature (°C) pH Kinematic Viscosity (mm²/s) Solubility (Water) Powder White. Typically methacrylate. Not available. 150 - 230 Not applicable. Not applicable. Not applicable. Not applicable. Not available. Not available. Not available. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Solubility (Other) Partition Coefficient (n-Octanol/water) Vapour pressure (Pascal) Density (g/ml) Bulk Density (g/ml) Vapour Density (Air=1) Particle characteristics Explosive Properties Oxidising properties Relative Evaporation Rate (Ether = 1) Viscosity (mPa. s)

Not available. Not applicable. Not applicable. 1.1 - 1.18 0.60 - 0.75 Not applicable. Not available. Weakly to moderately explosible. Not applicable. Not applicable. Not applicable.

10. STABILITY AND REACTIVITY

Reactivity	Non-reactive material.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None known.
Conditions to avoid	Avoid dust generation. Keep away from heat.
Incompatible materials	Polymer contains residual benzoyl peroxide. This may react with oxidising agents, reducing agents, acids, bases and amines leading to decomposition.
Hazardous decomposition product(s)	Methyl methacrylate, n-Butyl methacrylate, Dibenzoyl peroxide, Carbon dioxide, Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Acute toxicity	
Ingestion	Based upon the available data, the classification criteria are not met. Low oral toxicity.
Inhalation	Based upon the available data, the classification criteria are not met. High concentrations of dust may be irritant to the respiratory tract. High concentrations of vapour from hot operations may be harmful, cause irritation of the respiratory tract and slight narcotic effects.
Skin corrosion/irritation	Based upon the available data, the classification criteria are not met.
Serious eye damage/irritation	Based upon the available data, the classification criteria are not met. Dust may cause irritation.
Skin sensitization data	It is not a skin sensitizer. (By analogy with similar materials) Contains: (Methyl methacrylate, n-Butyl methacrylate, Dibenzoyl peroxide). During normal handling this will not constitute a hazard. If the polymer matrix is destroyed e.g. when the product is dissolved in organic solvent, chemical residues will be released from the polymer matrix. Under these conditions, they may produce an allergic reaction in persons already sensitised.
Aspiration hazard	Based upon the available data, the classification criteria are not met.
STOT - single exposure	Based upon the available data, the classification criteria are not met.
STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
Carcinogenicity	Based upon the available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity	The product is predicted to have low toxicity to aquatic organisms.
Persistence and degradability	The product is non-biodegradable in soil. There is no evidence of degradation in soil and
	water.
Bioaccumulative potential	The product has low potential for bioaccumulation.
Mobility in soil	The product is predicted to have low mobility in soil.

Other adverse effects

None known.

13. DISPOSAL CONSIDERATIONS

The waste is considered to be non hazardous. Clean scrap may be reprocessed. Certain packages are returnable. Please consult your local office for further details. Ensure that all packaging is disposed of safely.

Disposal methods

May be disposed of by landfill in accordance with local regulations. Incineration may be used to recover energy value.

14. TRANSPORT INFORMATION

UN No.	Not applicable.
Proper Shipping Name	Not applicable.
Class	Not applicable.
Packing group	Not applicable.
Environmental hazards	Not applicable.
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of	Not applicable.
MARPOL 73/78 and the IBC Code	

15. REGULATORY INFORMATION

Safety, health and environmental	HPR (WHMIS 2015)
regulations/legislation specific for the	Listed in DSL
substance or mixture	

US Federal Regulations

TSCA Inventory Status : All chemicals in this product comply with TSCA rules and regulations including TSCA Section 5 (Inventory Rules). Inventory Status : Active

SARA 302 - Extremely Hazardous Substances	None.
SARA 313 - Toxic Chemicals	None.
US State Regulations	
California	SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM None known.
	SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER None known.

16. OTHER INFORMATION

The following sections contain revisions or new	1, 3, 4, 5, 7, 8, 11, 15, 16
statements:	
Date of preparation:	8 -August- 2023

LEGEND

Note: Not all of the following are necessarily contained in this Safety Data Sheet: LTEL: Long Term Exposure Limit STEL: Short Term Exposure Limit TWA: Time Weighted Average PEL: Permissible Exposure Levels OSHA: Occupational Safety and Health Administration SARA: Superfund Amendments and Reauthorisation Act * Particle Not Otherwise Specified

IMPORTANT: USE IN THE MANUFACTURE OF MEDICAL DEVICES AND RELATED PRODUCTS.

Mitsubishi Chemical America Inc. has performed no clinical testing on the use of this product in any medical application. Mitsubishi Chemical America Inc. has no data to support the use of this product in any medical application. This product has been manufactured to a specification according to high standards of manufacturing practice. Mitsubishi Chemical America Inc. supplies this product on the specific understanding that it is the sole responsibility of the medical device manufacturer to ensure that the medical device is both safe and fit for the intended purpose and that this product is suitable for use in its manufacture.

It is the responsibility of the end-product manufacturer to identify all market and use-specific regulations and to ensure compliance with these regulations.

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