MATERIAL SAFETY DATA SHEET

schottlander

1. INDENTIFICATION OF SUBSTANCES / PREPARATION AND COMPANY

Product Name: Pegasus Pourable Cold Cure Liquid
Product Code: 225, 227

Application: With Pegasus Pourable Cold Cure Powder forms a cold cured acrylic denture base

Company: Davis Schottlander & Davis Ltd
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2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

This substance is classified as hazardous according to GHS Regulation EC1272/2008

Physical	H225 Flammable liquids	Hazard Category 2
Health	H315 Irritation of skin	Hazard Category 2
	H317 Skin sensitisation	Hazard Category 1B
	H335 Specific Target Organ Toxicity - Single exposure (inhalation)	Hazard Category 3

2.2 Label elements

In Accordance with Regulation EC 1272/2008
Signal word: Danger
GHS Pictogram

H315 H317 H335

H225

Hazard Statement:	H225	Highly flammable liquid or vapour
	H315	Causes skin irritation
	H317	May cause an allergic skin reaction
	H335	May cause respiratory irritation

Precautionary Statement (Prevention)	P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
	P261	Avoid breathing dust/fume/gas/mist/vapours/spray
	P280	Wear protective gloves/protective clothing/eye protection/ face protection.
(Response)	P303+361+353	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
	P501	Dispose of contents/container in accordance with local Regulations.

Hazardous components
For labelling: Methyl methacrylate.

In Accordance with Directive 67/548/EC or Directive 1999/45/EC
Labelling in accordance
with EC Directives: Require labelling.

Hazardous components
for labelling: Methyl methacrylate

Hazard Symbols:


F Xi

F Highly flammable
Xi Irritant

Risk Phrases:
R11 Highly flammable.
R36/37/38 Irritating to eyes, respiratory system and skin.
R43 May cause sensitisation by skin contact.

Safety Phrases:
S9 Keep container in a well ventilated place
S16 Keep away from sources of ignition.
S24/25 Avoid inhalation, contact with skin and eyes. Wear suitable Protective clothing and gloves.
S29 Do not empty into drains.
S46 If swallowed seek medical advice immediately and show the container or label.
S60 This material and its container must be disposed of as Hazardous waste.

2.3 Other hazards
Polymerisation with heat evolution may occur in the presence of radical forming substances (e.g peroxides), reducing substances and/or heavy metal ions.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No, EC Index No, REACH No, EINECS No	% w/w	LTEL	Hazard/category/statement
Methyl Methacrylate	80-62-6 607-035-00-6 01-2119452498-28 201-29701	>96%	208 mg/m^3	Flam. Liq./2/H225 Skin Irrit./2/H315 Skin Sens./1/H317 STOT SE (inhalation)/3/H335
1,4- Butanediol dimethacrylate	208-81-7 - Pre-registered 218-218-1	<4.0%	-	Skin Irrit./2/H315 Eye Irrit/2a/H319 STOT SE (inhalation)/3/H335

In Accordance with Directive 67/548/EC or Directive 1999/45/EC

Component	CAS No.	Hazard symbol – R Phrase	Content
Methyl Methacrylate	80-62-6	F,Xi – 11,36/37/38, 43	>96%
1,4- Butanediol dimethcrylate	2082-81-7	Xi 36/37/38, 43	<4.0%

4. FIRST AID MEASURES

Description of first aid measures

General advice: Medical treatment is necessary if symptoms occur which are obviously caused by skin or eye contact with the product or by vapour inhalation. Remove soiled soaked clothing immediately.

Inhalation: Move casualty to fresh air and keep them calm. Seek medical attention.

Skin contact: Wash off immediately with soap and water. If skin irritation occurs, seek medical attention.

Eye contact: Holding eyelids open, immediately rinse thoroughly with plenty of water. Seek medical advice.

Ingestion: Do not induce vomiting. Immediately contact a doctor.

Most important symptoms and effects, both acute and delayed

Causes skin and eye irritation. Skin sensitisation.

Indication of any immediate medical attention and special treatment needed

No

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Foam, dry powder, carbon dioxide.

Unsuitable extinguishing media: Water.

Special hazards arising from the substance or mixture

No

Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Take care for adequate ventilation. Use personal protective clothing. Keep away from sources of ignition. Use breathing apparatus if exposed to vapour/dust/mist/aerosol.

Environmental procedures

Do not allow to enter drains/surface water/ground water/sewerage systems. If entry occurs IMMEDIATELY alert the Environment Agency or other equivalent appropriate body.

Methods and material for containment and cleaning up

Larger volumes: remove mechanically (by pumping). Use explosion-proof equipment.

Smaller volumes and/or residues: contain with absorbent material (eg. Sand, diatomaceous earth, acid absorbent, universal absorbent or sawdust). Dispose of in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Ensure the area is well ventilated. Keep container tightly closed. Keep away from heat, sparks and open flame – no smoking. Take precautionary measures against static discharge. In the event of fire, use explosion-proof equipment only. Cool the endangered containers with water. When heated above the flashpoint and/or during spraying (atomising), ignitable mixtures may form in air.

Conditions of safe storage, including any incompatibilities

Keep only in the original container and do not allow temperature to exceed 30°C. Protect from light. Fill the container by approx. 90% only as oxygen (air) is required for stabilisation. With large storage containers, ensure oxygen supply is sufficient to allow stability. Can polymerise with intense heat release.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure controls

Monitoring Date: For monitoring procedures and technical data refer to, for instance, The National Institute for Health and Safety (NIOSH) – Manual of Analytical Methods, method 2537.

Derived No-effect Level (DNEL)

Critical Component	Routes of Exposure (LONG-TERM)	DNEL
Methyl Methacrylate	Inhalation Dermal Oral	210mg/m^3 74.3mg/m^3 -

Predicted No-Effect Concentration (PNEC)

Critical Component	Routes of Exposure (LONG-TERM)	PNEC
Methyl Methacrylate	Water Soil Air	0.94mg/l - -

General protective measures: Do not inhale vapours. Avoid contact with eyes and skin.

Personal Protective Equipment

Hygiene measures:

Store work clothes separately. Remove soiled or soaked clothing immediately. Follow the usual good standards of occupational hygiene. Clean skin thoroughly after handling. Apply skin cream.

Respiratory protection:

If ventilation is insufficient, breathing apparatus to be used in case of high concentrations, short term: filter appliance, filter A.

Hand protection:
Butyl rubber gloves (0.7mm), break through time 60 minutes (EN 374:2004). In practice, due to variable exposure conditions, this information can only be used as an aid to selection of a suitable chemical protection glove. This information does not substitute suitability tests by the end user. A suitable glove type should be selected for each work environment. Gloves should be replaced regularly, especially after extended contact with the substance.
Eye protection:
Wear approved, tightly fitting safety goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form:	Liquid	**Colour:**	Colourless
Odour:	Ester-like	**Melting Temp:**	-48°C
Boiling Temp:	100.3°C @ 1.013hPa	**Flashpoint:**	10°C (method DIN 51755 – closed cup
Ignition Temp:	430°C (method DIN 51794)	**Lower Explosion Limited:**	2.1% vol. @ 10.5°C
Upper Explosion Limit:	12.5% vol.	**Vapour Pressure:**	47hPa @ 20°C
Relative Density:	0.94g/cm^3 @ 20°C	**Relative Vapour Density:**	>1 @ 20°C (related to air)
Solubility in Water:	1.6g/l @ 20°C, difficult to mix	**Solubility (Qualitative):**	Miscible with most organic solvents
pH Value:	Not applicable	**Partition Co-efficient:**	LogPow 1.38 (measured, n-Octanol/water)
Viscosity (Dynamic):	0.6mPa's @ 20°C (method Brookfield)		

Other information: None

10. STABILITY AND REACTIVITY

10.1 Reactivity
Refer to Sections 2.3 and 10.2
10.2 Chemical stability
Stable under normal temperature conditions and when used as directed. No decomposition occurs when used as directed.
10.3 Possibility of hazardous reactions
Refer to Section 2.3
10.4 Conditions to avoid
The substance is normal supplied in a stabilised form. If the permissible storage period/storage temperature is exceeded, the product may polymerise with heat generation. Avoid excessive heat for long periods of time. Avoid heat, flames and other sources of ignition.
10.5 Incompatible materials
Free radical initiators
Reducing agents
Tertiary amines
Heat metals
Peroxides
Oxidising agents
Mineral acids
Strong acids/alkalis
10.6 Hazardous decomposition products
Oxides of carbon. No decomposition occurs when used as directed.

11. TOXICOLOGY INFORMATION

Information on toxicological effects

Metabolism:	The substance is rapidly metabolised	
Acute Oral Toxicity:	LD_{50} rat	>5000mg/kg
	LD_{50} mouse	=5200mg/kg
	LD_{50} rabbit	>5000mg/kg
Acute Inhalation Toxicity	LC_{50} rat, 4h	29.8mg/l
	LC_{50} mouse, 3h	33mg/l
Acute Dermal Toxicity:	LD_{50} rabbit	>5000mg/kg
Caustic Burning/Skin Irritation:	Rabbit, 25h (OECD 405) If skin contact is prolonged and/or frequent, irritations cannot be excluded. Skin Irritant Category 2 (UN-GHS)	Not irritating-slightly irritating
Serious Eye Damage/Irritation:	Rabbit, 24h	Not irritating-slightly irritating
Respiratory/Skin Sensitisation:	Guinea pig (OECD 406) Repeated exposure may cause skin dryness or cracking. In humans, various types of allergic reactions have been observed (symptoms: headache, eye irritations, skin affections). Skin Irritant Category 1B (UN-GHS)	Sensitising
Aspiration Hazard:	No evidence for hazardous properties (structure-activity relationship)	
Germ Cell Mutagenicity:	+ve as well as –ve results in *in vitro* Mutagenicity/genotoxicity tests. No Experimental evidence of genotoxicity *in vivo* is available. In general, not mutagenic according to international criteria.	
Carcinogenicity:	Non-carcinogenic in inhalation and feeding studies performed in rats, mice and dogs.	
Reprotoxicity/Teratogenicity:	No indication of toxic effects in experimental.	
Human Health Hazard Assessment:	CMR:no	
Specific Target Organ Toxicity – Single Exposure:	Respiratory tract irritation	Hazard Category 3
Specific Target Organ Toxicity – Repeated exposure:	No evidence for hazardous properties Rat, inhalation, 25-400ppm Findings: damage to nasal mucous membrane.	NOAEL, 25ppm 400ppm
	Rat, dilute ingestion, 6-2000ppm Findings: No toxic effect	NOAEL, 2000ppm
General Information:	Avoid contact with skin and eyes and inhalation of substance vapours.	

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Aquatic Environment	Hazardous to the aquatic environment	Acute Aquatic Toxicity Category 3
Aquatoxicity, fish	LC_{50} *Oncorhynchus mykiss*, 96h	>79mg/l
	LC_{50} *Lepomis macrochirus*, 72h	264mg/l
	LC_{50} *Lepomis macrochirus*, 96h	191mg/l
Aquatoxicity, invertebrates	EC_{50} *Daphnia magna*, 48h (OECD 202)	69mg/l
	Daphnia magna, 21d flow through (OECD 202)	NOEC, 37mg/l
Aquatoxicity, aquatic plants	EC_{50} *Selenastrum capricornutum*, 72hr (OECD 201)	>110mg/l
	EC3 *Scenedesmus quadricauda*, 8d (DIN 38412:9)	37mg/l
Toxicity in Microorganisms	EC3 *Pseudomonas putida*, 16h	100mg/l

12.2 Persistence and degradability

Persistence and Degradability	No evidence for hazardous properties	
Biodegradability	Readily degradable, 14d, 28d (OECD 301, 301C) The substance in inherently biodegradable, but not readily biodegradable to OECD criteria	94%

12.3 Bioaccumulative potential

Bioaccumulation	No evidence for hazardous properties

12.4 Mobility in soil

Mobility	The substance has poor water solubility. No evidence for hazardous properties.

12.5 Results of PBT and vPvB assessment

Persistent, Bioaccumulative or Toxic	No (REACH, Annex VIII)
Very Persistent, very Bioaccumulative	No (REACH, Annex VIII)

12.6 Other adverse effects

General Information	Do not allow to enter soil, waterways or waste water.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Substance:

Waste is hazardous and to be treated as controlled waste. Product must be disposed of as special waste after consultation with local waste authorities and the disposal company in a suitable and licensed facility.

Packaging:

Contaminated packaging should be emptied optimally and after appropriate professional cleaning may be taken for re-use. Packaging that cannot be cleaned should be disposed of professionally. Do not puncture or incinerate, even when empty. Contaminated rags and the like must be discarded into designated a fireproof bucket.

List of Waste, LOW:

Chemicals and gases in containers, 16 05

16 05 06	Laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals.
16 05 08	Discarded organic chemicals consisting of or containing dangerous substances.

Always check the given waste code according to the actual conditions of manufacturing, formulation or use in your facility.

14. TRANSPORT INFORMATION

14.1 UN number UN 1247 Hazard Class 3, flammable liquids Packing Group II

14.2 UN proper shipping name

Land Transport

ADR/GGVSEB UN/Germany

UN 1247 METHYL METHACRYLATE MONOMER MONOMER, STABILISED, Class 3, Group II, Tunnel restriction code D/E
Hazard no. 339

Land Transport RID/GGVSEB	UN 1247	METHYL METHACRYLATE MONOMER MONOMER, STABILISED, Class 3, Group II Hazard no. 339
Inland Waterway Transport ADNR /GGVSEB	UN 1247	METHYL METHACRYLATE MONOMER MONOMER, STABILISED, Class 3, Group II
Shipment by Sea IMDG /GGVSee	UN 1247	METHYL METHACRYLATE MONOMER MONOMER, STABILISED, Class 3, Group II
	EmS	F-E, S-D
	Marine pollutant	No
Air Transport ICAO/IATA	UN 1247	METHYL METHACRYLATE MONOMER MONOMER, STABILISED, Class 3, Group II

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

National Legislation

Occupational Restrictions		Note for juveniles. Note for pregnant women and nursing mothers EC Directive 92/85/EEC
Status of Registration	REACH (EU)	registered/pre-registered
	TSCA (USA)	listed or exempt
	DSL (CDN)	listed or exempt
	AICS (AUS)	listed or exempt
	METI (J)	listed or exempt
	ECL (KOR)	listed or exempt
	PICCS (RP)	listed or exempt
	IECSC (CN)	listed or exempt
	HSNO (NZ)	listed or exempt Code: HSR001195

Chemical safety assessment

Labelling in accordance with GefStoffV/EC		Methyl Methacrylate
Hazard symbols	F	Highly flammable
	Xi	Irritant
H-statements from Section 3	H225	Highly flammable liquid and vapour
	H315	Causes skin irritation
	H317	May cause an allergic skin reaction
	H335	May cause respiratory irritation
R-phrases from Section 3	R11	Highly flammable
	R36/37/38	Irritating to eyes, respiratory system and skin
	R43	May cause sensitisation by skin contact

16. FURTHER INFORMATION

The substance is normally supplied in a stabilised form.
If the permissible storage period and/or storage temperature is noticeably exceeded, the substance may polymerise with heat evolution.

The data given above covers exclusively the safety requirements of the product(s) and is based on our current knowledge and experience. It does not signify any warranty with regards to the products properties. This product is only supplied for specific uses in dentistry and must be used in accordance with the directions for use.