



HEALTH AND SAFETY INFORMATION according to directive 91 / 155 / EEC

1 - Identification of the product and of the company.

Product description : **SRP 910 Polyurethane Resin**

Address : **SICOMIN Composites**

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2 - Composition / Information on the components

Dangerous components	CAS n°	%	Symbol	Risk code
Diisocyanate of diphenylmethane (MDI)	026447-40-5	< 1	Xn	20 36/37/38 42
4.4' Dicyclohexylmethanediyle (MDI Hydrogenated)	5124-30-1	< 1	T	23 36/37/38 42/43
Butyl Acetate	123-86-4	< 25	F	10

Type: Prepolymer , polyurethane and solvent based preparation

3 - Identification of Dangers

Xn : Noxious F: Flammable

R10 : Flammable

R 36/37/38: Irritant to eyes , respiratory tract and skin

R 20 : Noxious through inhalation and skin contact

R 42/43: Can incur sensitization through inhalation and skin contact

4 - First Aid

Signs and symptoms of exposure (possible long term effects): No Action

Signs and symptoms of exposure (acute effects)

Never induce vomiting or try to administer orally if the patient is unconscious or convulsing.

Inhalation: In case of reactions escort patient into fresh air, consult a doctor

Skin contact: Wipe with absorbent paper then wash in lots of soapy water for at least 15 minutes.
Remove contaminated clothing.. Consult a doctor if the irritation persists.

Eye contact: Hold eyelids open and rinse immediately with lots of water for at least 15 minutes.
Consult an ophthalmologist immediately.

Ingestion: The decision whether or not to induce vomiting can only be made by a doctor

5 - Fire Prevention Methods

Classed as: Flammable

Products of combustion: Carbon oxides, nitrous oxides, isocyanate vapors and traces of hydrogen cyanide . The products of thermal de-composition must therefore be treated as potentially dangerous and appropriate precautions must be taken

Means of extinction: Foam, Carbon dioxide (CO2), vaporized water and dry powders.

Vaporized water is also useful for cooling exposed containers and dissipating vapors .

Means of Extinction not recommended : Dousing in large quantities of water

Fire fighting protection equipment: Conserve liquids discharged at the time of the fire for future removal. Fire fighters must be equipped with respiratory protection equipment complete with full face shield and positive air flow. PVC boots, gloves and protective clothing must be worn.



N.B.: The contamination of the product by water creates carbonic gas and , as a result , a dangerous increase in pressure inside the containers .

Conserve liquids dispersed at the time of the fire for future removal .

6 - Measures to be taken in case of accidental dispersion

- Evacuate excess personnel . Ventilate the area . Separate the source products of the fire .
- Do not breathe the vapors
- Cleaning should be undertaken only by trained personnel. Persons dealing with significant spillage should be wearing total protective clothing.

Precautions for the protection of the environment

- Prevent further leaks and spillage's . Prevent the product from penetrating the ground, entering water channels above or below ground.
- Waste including washing and rinsing water should be collected not discharged , to be disposed of by special disposal services or eliminated by incineration .

Cleaning methods

Contain and soak up spillage with an absorbent, inert and non - flammable material.

Load by bucket into fully open containers or into plastic bags for future decontamination if necessary.

Do not close waste containers : release of CO₂ . Clean the area of the spillage with a decontaminating solution of water / ammoniac / liquid detergent (90 / 8 / 2) . Whilst solvents are not recommended for cleaning , at least respect the safety info. and the conditions of exposure for the handling of the solvent concerned. Remove and dispose of residues.

7 - Handling and Storage

Handling : The vapors are heavier than air , they can spread out and form explosive mixtures with air . Be sure to have sufficient ventilation in the workplace or a local extractor fan .

Keep temperatures below 30 °C .

Distance the product from sources of heat , naked flames and sparks .

Take necessary precautions to avoid contact with skin , eyes or clothing. Avoid breathing in vapors .

Close containers immediately after removing required amount .

Storage : Keep containers well sealed and store them indoors in a well ventilated area.

Keep dry. Keep away from alkaline products, heat and flames.

Store at 15 - 25 C

Max. storage time : 1 year in original containers

8 - Individual Protection / Exposure control

Technical measures : An excellent general ventilation or extraction system is necessary .

Respiratory equipment : Necessary as soon as TWA is achieved , obligatory in confined spaces .

- Short term exposure : mask with A2 - P2 filter
- Intense Exposure : Respirator working independently from ambient air

Skin protection : Use impermeable polyvinyl or neoprene rubber gloves.

Eye protection : Hermetic protective goggles and a full face mask when there is a risk of splashing.

Additionally :

- In case of hypersensitivity of the respiratory tract or the skin (asthma , chronic bronchitis , chronic skin condition) handling of the product is not recommended .
- Do not drink , smoke or eat around areas where the product is in use .
- Keep food and drink well away . Keep away from pets .



Limits of exposure in the workplace

Components	VLE		TWA	
	ppm	mg/m ³	ppm	mg/m ³
Diisocyanate of diphenylmethane	/	/	0.01	/
4,4' Dicyclohexylmethanediyle	200	940	150	710
Butyl Acetate	150	710	150	713

Data. - INRS / France / - No. Info.

9 - Physical and Chemical Properties

Appearance	Viscous Liquid
Color	Light Yellow
Odor	Solvent
pH	Na
Boiling point (°C)	126
Freezing point (°C)	undetermined
Flash point	23 °C (in closed cup Pensky Martens test)
Danger of Explosion	The product is not explosive but explosive mixtures of vapor and air can be formed
Point of Auto- Combustion (°C)	421
Density at 20 °C	1.0 to 1.2
Viscosity (mPa.s at 25 °C)	1400 - 2000
Vapor Pressure at 50 °C	1.33 kpa
Solubility (water)	Reacts with water to create CO ₂ and <u>Polyureas</u>
Solubility (other)	Ketones, aromatics, acetates

10 - Stability and Reactivity

Chemical stability : Stable in normal storage conditions

Conditions to avoid : Prolonged heat of above 40 °C

Avoid contact with : Acids , alcohol's , amines , water , galvanized metals , leather and its related products , strong oxidants (Chromic acid type) .

Dangerous Polymerization : This will not occur spontaneously. On contact with water there is a progressive release of CO₂ , therefore increased pressure in closed containers and risk of bursting .

The product of this reaction is polyurea by nature (insoluble in water and with a high point of fusion)

Follow the instructions to avoid overheating.

11 - Toxicity information

Products	MDI	Hydrogenated MDI	Butyl Acetate
CAS No	1226447 - 40 - 5	5124 - 30 - 1	34590 - 94 - 8
LD 50 (oral , rat mg/kg) :	> 2 000	> 11 000	undetermined
LD 50 (skin , rabbit mg/kg) :	> 2 000	> 10 000	undetermined
LC 50 (inhalation ; rat mg/kg 0.75 hrs)	490	300	undetermined

Acute Toxicity

Rats were exposed to MDI by aerosol for 2 years . High concentrations produced chronic pulmonary irritation . Prolonged irritation led to the formation of lung tumors in some rats exposed at a level of 6 mg/m³ . No tumors occurred in toe exposed to 1 mg/m³ or those at 0.2 mg/m³ . Without prolonged , intense , exposure leading to chronic pulmonary irritation and lesions , it is highly unlikely that tumors will occur . Industrial experience has not indicated any connection between exposure to MDI based products and the development of cancer in man .

Ingestion : Toxicity will probably be weak if administered orally alone . Polymerization occurs through saliva contact .



Skin Contact : Prolonged exposure should not result in the absorption of noxious product constituents through the skin . Repeated exposure could result in skin, irritation , swelling , inflammation , even in an allergic dermal reaction in man.

Inhalation : The product is an irritant for the respiratory tract . In the hypersensitive patient bronchial constriction (symptoms as with asthma) can occur .

Eye contact : Can provoke an irritation and an irreparable lesion of the cornea .

12 - Ecological Information

The product reacts with water releasing carbonic gas and creating an insoluble product of the reaction , Polyurea and with a high point of fusion . This reaction is greatly assisted by the presence of tenso-actives or soluble solvents in the water.

Degradability : The biodegradation of polyureas in static laboratory conditions is weak .

13 - Disposal Considerations

Elimination: Must be carried out in accordance with local , regional or national legislation . Untreated products cannot be destroyed . Waste , even in small quantities must never be thrown into sewers, water tanks or waterways.

Large quantities : Controlled destruction by fire with washing and neutralization of vapors and using incinerators specially designed for the destruction of dangerous waste chemicals . If the destruction is carried out by a specialized enterprise then insure that it is fully informed and that all residue containers are correctly labeled .

Used Packaging : Empty containers must be destroyed in the same way as dangerous waste unless the product is completely removed from its sides . Danger labels can also be removed from the sides of the container which is then recycled or destroyed according to local regulations .

14 - Transportation Information

ONU n°:	2478	Flash point:	23 °C
AIR :	OACI / IATA : Class 3,	Packing group	III Labeling : 3, 6, 1
SEA :	IMDG : Class 3	Packing group	III Page IMDG : 3242 marine pollutant : neg. EMS: 3-07
ROAD / RAIL :	Class ADR / RID : 3	Enumeration figures	31 C Labeling : 3, 6, 1

Customs classification : Isocyanate : Toxic in solution . Flammable NSA

Content: Diisocyanate of dicyclohexylmethane , diisocyanate of diphenylmethane , Butyl Acetate

15 - Information on Regulations

EEC Classification according to doc. 1 of directive 67 / 548 / EEC

Danger symbol : Xn Noxious N: Environmentally dangerous

Risk code

R 10	Flammable
R 36 / 37 / 38	Irritant for eyes and skin and respiratory tract
R 20	Noxious through inhalation or skin contact
R 43	Can provoke sensitization through skin contact

Safety code

S 23	Do not breathe vapors or sprays
S 28	After skin contact wash immediately with soap and water
S 38	When ventilation is insufficient , wear appropriate respiratory protection
S 37 / 39	Wear appropriate protective gloves , goggles and a face mask
S 61	Avoid product discharge into the environment

16 - Additional Information

This document of safety information has been created according to directive 91 / 155 / EEC (Technical Directives for Safety) and 88 / 379 / EEC (Directives for General Preparation)

Origin : R & D - CLM JPG Laboratory

File : W / SEC UK SRP 910

This document completes but does not replace the technical utilization papers . The information provided is based on our relative knowledge of the product in question at the date indicated above . It is given in good faith . The user is warned of the risks incurred by putting the product to any use other than for which it was conceived . It is the users responsibility to know and apply the content of these texts to his work and to take the necessary precautions in the product's application.