



SAFETY DATA SHEET

BELZONA® 1221 (SUPER E-METAL) SOLIDIFIER

According to Regulation (EU) No 453/2010

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name BELZONA® 1221 (SUPER E-METAL) SOLIDIFIER
Internal Id SN2024

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses A rapidly solidifying repair system for emergency and permanent bonding, repairing and rebuilding of all ferrous and non-ferrous metals. For industrial use only.
Uses advised against The product should not be used for purposes other than those recommended in the appropriate Instructions For Use (IFU) leaflet.

1.3. Details of the supplier of the safety data sheet

Supplier Belzona Polymerics Limited
Claro Road, Harrogate
North Yorkshire
HG1 4DS, England
☎ +44 (0) 1423 567641
+44 (0) 1423 505967
sds@belzona.com

1.4. Emergency telephone number

+44 (0) 1423 567641 (office hours: 0845-1715 GMT)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (1999/45/EEC) Xn;R20. Xi;R37. R43.

Reference

The full text for all R-Phrases is displayed in Section 16.

2.2. Label elements

Contains ALIPHATIC POLYISOCYANATE
EPOXY RESIN (Number average MW <= 700)

Labelling



Harmful

Risk Phrases

R20	Harmful by inhalation.
R37	Irritating to respiratory system.
R43	May cause sensitisation by skin contact.

Safety Phrases

P4	Contains isocyanates. See information supplied by the manufacturer.
P5	Contains epoxy constituents. See information supplied by the manufacturer.
S23C	Do not breathe fumes/vapour.
S36/37	Wear suitable protective clothing and gloves.

BELZONA® 1221 (SUPER E-METAL) SOLIDIFIERS38
S60In case of insufficient ventilation, wear suitable respiratory equipment.
This material and its container must be disposed of as hazardous waste.**2.3. Other hazards**

This product contains isocyanates. Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not risk exposure. Based on information received from our suppliers no PBT or vPvB substances are intentionally added to this product.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.2. Mixtures**

ALIPHATIC POLYISOCYANATE			60-100%
CAS-No.: 28182-81-2	EC No.:	Registration Number: 01-2119485796-17-xxxx	
Classification (EC 1272/2008) Acute Tox. 4 - H332 Skin Sens. 1 - H317 STOT SE 3 - H335		Classification (67/548/EEC) Xn;R20. Xi;R37. R43.	
EPOXY RESIN (Number average MW <= 700)			1-5%
CAS-No.: 25068-38-6	EC No.: 500-033-5	Registration Number: 01-2119456619-26-xxxx	
Classification (EC 1272/2008) Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411		Classification (67/548/EEC) R43 Xi;R36/38 N;R51/53	
HEXAMETHYLENE-DI-ISOCYANATE			<0.5%
CAS-No.: 822-06-0	EC No.: 212-485-8	Registration Number: 01-2119457571-37-xxxx	
Classification (EC 1272/2008) Acute Tox. 3 - H331 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 STOT SE 3 - H335		Classification (67/548/EEC) T;R23 R42/43 Xi;R36/37/38	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition Comments

This product is based on partly reacted pre-polymer isocyanate with a very low free monomer content.

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General information**

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air. Keep the patient warm and at rest. If breathing has stopped, administer artificial respiration. Give nothing by mouth. If unconscious, place in the recovery position and seek medical advice.

Ingestion

If accidentally swallowed obtain immediate medical attention. Keep at rest. Rinse mouth with plenty of water. Do NOT induce vomiting.

BELZONA® 1221 (SUPER E-METAL) SOLIDIFIER

Skin contact

Remove contaminated clothing. Wipe off mechanically. Wash skin thoroughly with soap and water or use a proprietary skin cleaner. Do NOT use solvents or thinners. If irritation or inflammation persists, seek medical attention.

Eye contact

Contact lenses should be removed. Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart, and seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation

Respiratory exposure may cause acute irritation and/or sensitisation of the respiratory system, resulting in asthmatic symptoms, wheezing and a tightness of the chest. Repeated exposure may lead to permanent respiratory disability.

Skin contact

Prolonged or repeated contact with the skin or mucous membrane may result in irritant symptoms such as redness, blistering or dermatitis. Onset of symptoms may be delayed. May cause allergic skin reaction.

Eye contact

May irritate eyes.

4.3. Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

Use: sand, foam, carbon dioxide, chemical powder or water fog for larger fires. Do NOT use water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

In a fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide, oxides of nitrogen and ammonia may be produced.

5.3. Advice for firefighters

Special Fire Fighting Procedures

Fire will produce dense black smoke containing hazardous products of combustion. Exposure to decomposition products may be a hazard to health. Appropriate self-contained breathing apparatus may be required. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or watercourses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

The product is a non-flowing paste. The likelihood of spillage is considered to be extremely unlikely.

6.2. Environmental precautions

Do not discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Scrape the product into a suitable labelled container for disposal in accordance with the waste regulations.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

BELZONA® 1221 (SUPER E-METAL) SOLIDIFIER

GENERAL

Where possible open containers and mix components in a well ventilated place away from the application area. Prevent air-borne concentrations higher than the occupational exposure limits (see Section 8). Exclude non-essential personnel. Minimise the number of employees exposed and the duration of their exposure. Avoid skin and eye contact. Smoking, eating and drinking should be prohibited in areas of storage and use. For personal protection see Section 8. Good housekeeping methods and regular safe removal of waste materials should be observed.

FIRE/EXPLOSION

This product is combustible. Exclude sources of heat, sparks and open flame.

SPECIAL

Isocyanates may generate vapours at temperatures approaching 40 °C, which can significantly increase the risk of exposure. All applications involving isocyanates should be carried out at the lowest temperature possible to minimise the creation of vapours.

7.2. Conditions for safe storage, including any incompatibilities

Observe the label precautions. Store between 5 °C and 30 °C unless otherwise stated in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking. Prevent unauthorised access. Store separately from oxidising agents and strongly alkaline and strongly acidic materials, amines and alcohols.

ENVIRONMENTAL STORAGE PRECAUTIONS

Spillage, incorrect storage of chemicals or waste materials or unsuitable disposal activities can result in pollutants seeping through the soil, causing serious harm to groundwater- which is a vital source of drinking water. All wastes especially liquid wastes, must be securely stored on site in designated areas that are isolated from surface drains and bunded to contain any spillages.

Storage Class

The principals contained in the HSE guidance note Chemical Warehousing: storage of packaged dangerous substances (HSG71) should be observed when storing this product.

7.3. Specific end use(s)

Application by plastic applicator or spatula provided. Mix with Base component before use. Please refer to the relevant Belzona® Instructions For Use for further information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
HEXAMETHYLENE-DI-ISOCYANATE	WEL		0,02 mg/m ³		0,07 mg/m ³	Sen, as NCO

WEL = Workplace Exposure Limit.

Sen = Capable of causing occupational asthma.

Ingredient Comments

Independent monitoring performed during the mixing and use of a single unit of Belzona® 1221 (approximately 25-35 minutes duration) under worst-case conditions i.e. confined space, no ventilation and in close proximity to the sample, has shown airborne concentrations of HDI to be <0.008mg/m³ LT EXP 8 hrs, significantly below the assigned WEL.

When personal protective equipment, including respiratory protective equipment, is used to control exposure to hazardous substances it must be selected to meet the requirements of the COSHH Regulations.

All reasonable precautions should be taken to reduce exposure to isocyanates to the lowest level possible by means other than the use of Respiratory Protective Equipment (RPE). Suitable RPE may then be used as a last resort to ensure that the level of exposure is reduced so far as is reasonably practicable below the WEL. Exposure to chemicals assigned occupational exposure limits (OELs) should be controlled using the most effective and reliable measures, proportional to the health risk, which minimise their escape and spread. All relevant exposure routes should be taken into account. Exposure to chemicals that are respiratory sensitisers or have been shown to cause occupational asthma must be controlled to as low a level as is reasonably practicable.

8.2. Exposure controls

Engineering measures

Use in well ventilated areas or provide adequate mechanical ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of vapours below the relevant occupational exposure limits, suitable respiratory protective equipment should be worn (see 'Respirators' below).

BELZONA® 1221 (SUPER E-METAL) SOLIDIFIER

Respiratory equipment

GENERAL GUIDANCE ON RESPIRATORY PROTECTION

Respiratory protection is not normally required but it may be required when this product is used in confined spaces or where adequate ventilation cannot be achieved.

STANDARD APPLICATIONS/APPLICATION OF SMALL QUANTITIES

It is essential that the concentration of the contaminant(s) in the application environment does not exceed the applicable Occupational Exposure Limit(s) (OELs) multiplied by the Assigned Protection Factor (APF) quoted for the respiratory protective equipment selected. Where necessary, it is recommended that respiratory protective equipment that complies with EN 14387 with a full face visor should be worn in combination with a low boiling point organic vapours and high efficiency dust filter (AXP3). It is essential that the facepiece is correctly fitted and the filter is changed in accordance with the manufacturer's instructions.

Hand protection

GENERAL GUIDANCE ON HAND PROTECTION

Hand protection should be selected in accordance with EN 374 Protective gloves against chemicals. The breakthrough time of the gloves selected should exceed the expected use period. Where this is not possible gloves should be changed in good time, and in any case before the breakthrough time is exceeded. If any doubt exists, advice should be sought from glove suppliers on appropriate types. Barrier creams may help to protect exposed areas of skin but are not substitutes for full physical protection. They should not be applied once exposure has occurred.

SPECIFIC RECOMMENDATIONS

Use protective gloves made of: Neoprene. Nitrile.

STANDARD APPLICATIONS

Medium-heavy weight gauntlet type gloves that provide wrist protection are suitable.

APPLICATION OF SMALL QUANTITIES

Light weight disposable gloves are normally suitable.

Eye protection

It is recommended that eye protection, for example safety spectacles or goggles are worn at all times during the handling and use of this material. Eye protection should be selected in accordance with EN 166 Personal eye protection. During subsequent machining, grinding, abrasion or removal of this product appropriate eye protection should be selected according to the type of tools or equipment used.

Other Protection

STANDARD APPLICATIONS

Synthetic polyethylene coveralls such as the Tyvek PRO-TECH® or equivalent coveralls manufactured to EN 13034 Type 6, Protective clothing against liquid chemicals. Grossly contaminated clothing should be removed and the skin washed with soap and water or a proprietary skin cleaner.

APPLICATION OF SMALL QUANTITIES

Cotton overalls are normally suitable.

Hygiene measures

Wash hands at the end of each work shift and before eating, smoking and using the toilet. Ensure eye wash facilities (fountain, bottle, vials, etc.) are readily available. Do not put contaminated articles or equipment e.g. spatulas, applicators, brushes, cloths etc., into pockets. Where necessary, contaminated work clothing and shoes should be removed to prevent cross contamination of surfaces and the risk of inadvertent skin contact and ingestion.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Paste.
Colour	White.
Odour	Slight odour.
Solubility	Isocyanates react with water.
Initial boiling point and boiling range (°C)	D
Melting point (°C)	NIA
Relative density	@ 20 °C 1.15 - 1.25
Vapour density (air=1)	NIA
Vapour pressure	< 0.00001 kPa @ 20 °C
Evaporation rate	NIA
Viscosity	N.ap
Decomposition temperature (°C)	NIA
Flash point (°C)	~ 170 CC (Closed cup).
Auto Ignition Temperature (°C)	> 490
Flammability Limit - Lower(%)	NIA
Flammability Limit - Upper(%)	NIA

BELZONA® 1221 (SUPER E-METAL) SOLIDIFIER

Partition Coefficient (N-Octanol/Water)	NIA
Explosive properties	
Not applicable.	
Oxidising properties	N.ap
Odour Threshold	NIA
pH	NIA

9.2. Other information

This section contains typical values for Health, Safety and Environmental guidance only and is not intended to represent a technical specification for the product. D = Decomposes. NIA = No Information available. N.ap = Not Applicable.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No specific reactivity hazards associated with this product.

10.2. Chemical stability

Stable under recommended storage and handling conditions (see Section 7).

10.3. Possibility of hazardous reactions

No hazardous reactions expected when stored and handled as recommended.

10.4. Conditions to avoid

The product reacts slowly with water resulting in evolution of carbon dioxide. In closed containers, pressure build up could result in distortion, blowing and in extreme cases bursting of the container.

10.5. Incompatible materials

Materials To Avoid

Keep away from oxidising agents and strongly alkaline and strongly acidic materials to prevent the possibility of exothermic reaction.

10.6. Hazardous decomposition products

None under normal conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxicological information

There is no data on the product itself.

Acute toxicity:

Harmful if inhaled.

Skin Corrosion/Irritation:

Based on available data the classification criteria are not met.

Serious eye damage/irritation:

Based on available data the classification criteria are not met.

Respiratory or skin sensitisation:

Based on the properties of the isocyanate content of this product, respiratory exposure may cause acute irritation and/or sensitisation of the respiratory system, resulting in asthmatic symptoms, wheezing and a tightness of the chest. Sensitised persons may subsequently show asthmatic symptoms when exposed to airborne concentrations of isocyanates well below the occupational exposure limit. Repeated exposure may lead to permanent respiratory disability.
Sensitising to skin.

Germ cell mutagenicity:

Based on available data the classification criteria are not met.

BELZONA® 1221 (SUPER E-METAL) SOLIDIFIER

Carcinogenicity:

Based on available data the classification criteria are not met.

Reproductive Toxicity:

Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure:

Respiratory irritant effects that impair function with symptoms such as cough, pain, choking, and breathing difficulties.

Specific target organ toxicity - repeated exposure:

Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard:

Based on available data the classification criteria are not met.

Route of entry

Inhalation. Skin and/or eye contact.

Medical Considerations

Skin contact constitutes a pronounced hazard. Persons with a history of skin sensitisation problems should only be employed in processes in which this product is used under appropriate medical supervision.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

There is no data on the product itself. The following information is provided on the basis of the individual component data available.

12.1. Toxicity**Acute Fish Toxicity**

The products LC50/EC50/IC50 are expected to be greater than 100 mg/l in the most sensitive species. Not classified.

12.2. Persistence and degradability**Degradability**

No data available.

12.3. Bioaccumulative potential**Bioaccumulative potential**

No data available.

Partition coefficient NIA

12.4. Mobility in soil**Mobility:**

There is no data available on the product itself.

12.5. Results of PBT and vPvB assessment

Based on information received from our suppliers no PBT or vPvB substances are intentionally added to this product.

12.6. Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

General information

All cleaning activities including cleaning of equipment, floors and containers, can produce large volumes of contaminated waste. All cleaning agents used are potentially polluting. Water containing detergents, degreasers or any other cleaning agents must not be allowed to enter the surface water drains or soakaways. All water based cleaning/degreasing operations should be carried out in designated areas away from the surface water system and drained to the foul water system. Where this is not possible the surface water system should be isolated by suitable damming techniques and the contaminated water collected and removed for controlled safe disposal. Where water immiscible cleaners/degreasers are used for example solvents, the relevant product safety data sheet should be referred to for information on safe disposal.

BELZONA® 1221 (SUPER E-METAL) SOLIDIFIER

13.1. Waste treatment methods

GENERAL

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Controlled wastes include non-hazardous industrial and hazardous chemical wastes. All controlled wastes should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act. In addition, hazardous chemical wastes should be disposed of in accordance with the Hazardous Waste Regulations. When in doubt, using information provided in this safety data sheet, advice should be obtained from the National regulating agency whether the Hazardous Waste Regulations apply. Refer to information sources listed in Section 16.

COMPONENT DISPOSAL

TRANSIT PACKAGING: shrink or stretch wrap, boxes and fittings that have not been contaminated with product should be re-used or recycled. UNREACTED PRODUCT and empty uncleaned containers should be disposed of as controlled wastes. REACTED PRODUCT, spilled product that has been decontaminated in accordance with the procedure described in Section 6, contaminated mixing boards, spatulas, applicators, brushes, nominally empty containers and mixing bowls- once fully cured- should be disposed of as non-hazardous chemical waste.

Waste Class

List of Waste (LoW) code: 08 05 01*

*Hazardous waste pursuant to Directive 91/689/EEC. The LoW code quoted in this section is an absolute entry. Where in doubt refer to the List of Wastes, your local licensed waste contractor or the National regulating agency. Refer to information sources listed in Section 16.

SECTION 14: TRANSPORT INFORMATION

General

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of accident or spillage.

N.ap = Not Applicable.

14.1. UN number

N.ap

14.2. UN proper shipping name

N.ap

14.3. Transport hazard class(es)

N.ap

14.4. Packing group

N.ap

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N.ap

SECTION 15: REGULATORY INFORMATION

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

Uk Regulatory References

This product is classified and labelled for supply in accordance with the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002, as amended. The provisions of the Health and Safety at Work Act and the Control of Substances Hazardous to Health Regulations with amendments apply to the use of this product at work.

BELZONA® 1221 (SUPER E-METAL) SOLIDIFIER

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

General information

The information contained within this safety data sheet does not constitute the users own assessment of workplace risks as required by other health and safety legislation. As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant National legislation are complied with. The information contained within this safety data sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Information Sources

Provision and Use of Personal Protective Equipment Regulations 1992 (SI 1992: 2932).

PPG18: Control of Spillages and fire fighting run-off.

HSG53 The selection, use and maintenance of respiratory protective equipment, as amended.

HSG97 A step by step guide to COSHH assessment.

Health Surveillance at Work (HSG61) available from HSE Books.

UK ENVIRONMENTAL REGULATING AGENCIES:

England and Wales- Environment Agency; Scotland- Scottish Environment Protection Agency (SEPA); Northern Ireland- Environment and Heritage Service.

Training Advice

For further information please contact your supplier, Belzona consultant or Belzona direct.

Revision Comments

REVISION. This safety data sheet has been revised in the following Section(s): 2, 9, 11, 15, 16, Please observe the REVISION DATE. Should you be reading a safety data sheet that is more than 24 months old or have concerns over its validity, please contact your local Belzona consultant or Belzona direct (sds@belzona.com) and the most current information will be sent to you.

Revision Date 10-10-2014

Safety Data Sheet Status English. Approved.

Risk Phrases In Full

R20 Harmful by inhalation. , R23 Toxic by inhalation. , R36/37/38 Irritating to eyes, respiratory system and skin. , R36/38 Irritating to eyes and skin. , R37 Irritating to respiratory system. , R42/43 May cause sensitisation by inhalation and skin contact. , R43 May cause sensitisation by skin contact. , R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard Statements In Full

H315 Causes skin irritation. , H317 May cause an allergic skin reaction. , H319 Causes serious eye irritation. , H331 Toxic if inhaled. , H332 Harmful if inhaled. , H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. , H335 May cause respiratory irritation. , H411 Toxic to aquatic life with long lasting effects.

Classification procedure

The hazard classes for the classification of the mixture have been determined by the calculation method.

Revision No. 7.2