SAFETY DATA SHEET
BELZONA® 2100 BASE

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name BELZONA® 2100 BASE

Product number SN1774

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

Identified uses Belzona® 2100 Base is common to 2111, 2121, 2131 and 2141 Solidifiers. For product specific application information please refer to the relevant Belzona® Instructions For Use. 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
HG1 4DS
United Kingdom
+44 1423 567641
sds@belzona.com

Manufacturer
Belzona Polymerics Limited
Claro Road, Harrogate
HG1 4DS
United Kingdom
+44 1423 567641
sds@belzona.com

1.4. Emergency telephone number

Emergency telephone VelocityEHS: +1 813-248-0585

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (SI 2019 No. 720)

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373

Environmental hazards Not Classified

Reference The full text for all hazard statements is displayed in Section 16.

2.2. Label elements

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Hazard pictograms

Signal word	Danger
Hazard statements	H315 Causes skin irritation. H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 May cause an allergic skin reaction. H351 Suspected of causing cancer. H335 May cause respiratory irritation. H373 May cause damage to organs (Respiratory system, lungs) through prolonged or repeated exposure if inhaled.
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe vapours. P280 Wear protective gloves, protective clothing and eye protection. P284 [In case of inadequate ventilation] wear respiratory protection. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308+P313 IF exposed or concerned: Get medical attention.
Supplemental label information	As from 24 August 2023 adequate training is required before industrial or professional use.
Contains	DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

2.3. Other hazards

Based on information received from our suppliers no PBT or vPvB substances are intentionally added to this product. This product does not contain components considered to have endocrine disrupting properties at ≥ 0.1%.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE **10-20%**

CAS number: 101-68-8 EC number: 202-966-0

This substance has specific concentration limits.Eye Irrit. 2 - H319C ≥ 5%.Skin Irrit. 2 - H315C ≥ 5%.Resp. Sens. 1 - H334C ≥ 0.1%STOT SE 3 - H335C ≥ 5%.

Classification
Acute Tox. 4 - H332
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Resp. Sens. 1 - H334
Skin Sens. 1 - H317
Carc. 2 - H351
STOT SE 3 - H335
STOT RE 2 - H373

The full text for all hazard statements is displayed in Section 16.

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. Give nothing by mouth.
Ingestion	If accidentally swallowed obtain immediate medical attention. Keep at rest. Rinse mouth with plenty of water. Do NOT induce vomiting.
Skin contact	Remove contaminated clothing. 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

General information	Limited evidence of a carcinogenic effect.
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	Irritating to eyes.

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

Notes for the doctor	None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Use: sand, alcohol resistant 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, hydrogen cyanide, amines and alcohols may be produced.

5.3. Advice for firefighters

Protective actions during firefighting	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

Personal precautions	Exclude non-essential personnel. Keep up-wind of spill to avoid breathing vapours. Do not get on skin or in eyes.

6.2. Environmental precautions

Environmental precautions	Prevent spills from entering drains or sewers. If the product enters drains or sewers in large quantities, the local Water Company should be contacted immediately; in the case of contamination of streams, rivers or lakes, the appropriate National regulating agency.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Contain and collect spillages with non-combustible absorbent materials e.g. sand, earth, vermiculite, diatomaceous earth and place in a suitable labelled container. The contaminated area should be cleaned up immediately with a suitable decontaminant e.g. Sodium Carbonate (5 parts) / Water (95 parts). Add the same decontaminant to any residues and allow to stand for several days in a non-sealed container until no further reaction occurs. Once this stage is reached, close the container and dispose of in accordance with the waste regulations. Do not allow spilled product or the associated washings to enter surface water drains or watercourses.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13. For information on National regulating agencies refer to Section 16.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Keep the container tightly closed until ready for use. Vapours may collect in the container headspace during transit or prolonged storage. Do not breathe vapour when opening the container. Where possible open containers and mix components in a well ventilated place away from the application area. Once container seal is broken product should be used in a single application. Exclude non-essential personnel. Minimise the number of employees exposed and the duration of their exposure. Smoking, eating and drinking should be prohibited in areas of storage and use. For personal protection see Section 8. Always keep in containers made of the same material as the supply container. Ensure emergency equipment (for fires, spills, leaks, etc.) is readily available. FIRE/EXPLOSION This product is combustible. Exclude sources of heat, sparks and open flame. Good housekeeping methods and regular safe removal of waste materials should be observed. 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. Containers should be allowed to reach room temperature in a warm ventilated store inside the work place. Applying direct heat is not considered advisable without adequate safeguards to prevent overheating and extract isocyanate vapour from the container.

Advice on general occupational hygiene Wash 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.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions 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.

7.3. Specific end use(s)

Specific end use(s) Mix with Solidifier component before use. Please refer to the relevant Belzona® Instructions For Use for further information.

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SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

Long-term exposure limit (8-hour TWA): WEL 0,02 mg/m³
Short-term exposure limit (15-minute): WEL 0,07 mg/m³
as NCO
Sen
WEL = Workplace Exposure Limit.
Sen = Capable of causing occupational asthma.

Ingredient comments

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 that are respiratory sensitisers or have been shown to cause occupational asthma must be controlled to as low a level as is reasonably practicable.

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE (CAS: 101-68-8)

DNEL

Workers - Inhalation; Long term local effects: 0.05 mg/m³
Workers - Inhalation; Short term local effects: 0.1 mg/m³
Consumer - Inhalation; Long term local effects: 0.025 mg/m³
Consumer - Inhalation; Short term local effects: 0.05 mg/m³

PNEC

Fresh water; >1 mg/l
marine water; >0.1 mg/l
STP; >1 mg/l
Soil; >1 mg/kg

8.2. Exposure controls

Appropriate engineering controls

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 'Respiratory protection' below).

Eye/face 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.

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 Wear protective gloves made of the following material: Nitrile rubber. Medium-heavy weight gauntlet type gloves that provide wrist protection are suitable.

Other skin and body protection

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.

Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Respirator selection must be based on exposure levels, the hazards of the product and the safe working limits of the selected respirator. 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 140 (half mask) should be worn in combination with an organic/inorganic vapours, acid gases and ammonia cartridge (ABEK1). Where the creation of dust cannot be avoided or controlled by suitable engineering methods it is recommended that respiratory protective equipment that complies with EN 140 (half face mask) should be worn in combination with a dust/particulate filter (P2 or P3). It is essential that the facepiece is correctly fitted and the filter is changed in accordance with the manufacturer's instructions. APPLICATION AT HIGH AMBIENT TEMPERATURES Where necessary, it is recommended that respiratory protective equipment that complies with EN 14594 (compressed airline breathing apparatus) is worn if exposure to the applicator or other people nearby cannot be controlled to below the occupational exposure limit and engineering methods cannot reasonably be improved.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Straw.
Odour	Odourless.
Odour threshold	Not applicable.
pH	Not applicable.
Melting point	Not available.
Initial boiling point and range	Not available.
Flash point	>100°C/>212°F Closed cup.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	< 0.001 Pa @ 20°C/68°F
Vapour density	8.5
Relative density	1.1-1.2 @ 25°C/77°F
Solubility(ies)	Reacts in contact with water.
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	190-330 P @ 25°C/77°F
Explosive properties	Not applicable.
Oxidising properties	Not applicable.

9.2. Other information

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.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity See the other subsections of this section for further details.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No hazardous reactions expected when stored and handled as recommended.

10.4. Conditions to avoid

Conditions to avoid There are no known conditions that are likely to result in a hazardous situation.

10.5. Incompatible materials

Materials to avoid Keep away from oxidising agents and strongly alkaline and strongly acidic materials. Uncontrolled exothermic reactions occur with amines and alcohols. 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.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD_{50}) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD_{50}) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC_{50}) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Irritating to skin.

Serious eye damage/irritation

Serious eye damage/irritation Irritating to eyes.

Respiratory sensitisation

Respiratory 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.

Skin sensitisation

Skin sensitisation	May cause skin sensitisation or allergic reactions in sensitive individuals.

Germ cell mutagenicity

Genotoxicity - in vitro	Based on available data the classification criteria are not met.
Genotoxicity - in vivo	Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity	Suspected of causing cancer.
IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
NTP carcinogenicity	Not listed.

Reproductive toxicity

Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

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

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
Target organs	Respiratory system, lungs

Aspiration hazard

Aspiration hazard	Based on available data the classification criteria are not met.

General information	This product does not contain components considered to have endocrine disrupting properties at ≥ 0.1%.
Route of exposure	Inhalation Skin and/or eye contact
Medical considerations	COSHH requires that persons exposed to products containing respiratory sensitisers, are subject to appropriate health surveillance. Publications giving guidance on health surveillance are listed in Section 16. Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not risk exposure to isocyanates. 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. Animal studies have shown that skin contact with isocyanates may cause respiratory sensitisation.

Toxicological information on ingredients.

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} dust/mist mg/l)	3.68
Species	Rat

Carcinogenicity

IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.

SECTION 12: Ecological information

Ecotoxicity This product is not expected to present an environmental hazard under current legislation. The product should not be allowed to enter drains or watercourses or be deposited where it can affect ground or surface waters. The product reacts with water at the interface forming carbon dioxide gas and a solid insoluble product with a high melting point (polyurea).

12.1. Toxicity

Toxicity Based on the individual component data, the products LC50/EC50/IC50 are expected to be greater than 100 mg/l in most sensitive species.

12.2. Persistence and degradability

Persistence and degradability No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available.

Partition coefficient Not available.

12.4. Mobility in soil

Mobility There is no data available on the product itself.

12.5. Results of PBT and vPvB assessment

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

Other adverse effects None known. This product does not contain components considered to have endocrine disrupting properties at ≥ 0.1%.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods 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 hazardous chemical waste. 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 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 a general entry. LoW codes should be assigned based on the end use of the product. Where a more specific code is available it should be used in preference to the code given above. Where in doubt refer to the List of Wastes (2000/532/EC Comission Decision), your local licensed waste contractor or the National regulating agency. Refer to information sources listed in Section 16.

SECTION 14: Transport information

General Not classified for transport under current National and International Regulations. 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.

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

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 MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not carried in bulk.

SECTION 15: Regulatory information

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

National regulations Relevant EU provisions transposed through retained EU law.

EU legislation Regulation (EC) No 1272/2008 of the European Parliment and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Regulation (EC) No 1907/2006 of the European Parliment and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restrition of chemicals (REACH) (as amended).

Restrictions (SI 2020 No. 1577 Annex XVII) Entry number: 74

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.

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Key literature references and sources for data	MDHS 25/3 Organic isocyanates in air. HSG53 The selection, use and maintenance of respiratory protective equipment, as amended. Health Surveillance at Work (HSG61) available from HSE Books. HSG97 A step by step guide to COSHH assessment. UK ENVIRONMENTAL REGULATING AGENCIES: England and Wales- Environment Agency; Scotland- Scottish Environment Protection Agency (SEPA); Northern Ireland- Environment and Heritage Service.
Classification procedures according to SI 2019 No. 720	Where there is no test data available for the mixture, the classification has been determined based on the individual component hazard data in accordance with EC 1272/2008.
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): 1, 2, 3, 8, 11, 12, 15, 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	02/02/2023
Revision	2.7
SDS number	11502
SDS status	English. Approved.
Hazard statements in full	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H373 May cause damage to organs (Respiratory system, lungs) through prolonged or repeated exposure if inhaled.