1. IDENTIFICATION OF THE SUBSTRATE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name/designation: Euroroof PU Insulation Adhesive.

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

Relevant identified uses: Adhesive.

1.3 Supplier details

Alumasc Building Products Ltd
White House Works, Bold Road, Sutton, St Helens, Merseyside, United Kingdom, WA9 4JG
Tel: +44 (0)1744 648400
e-mail: technical@alumascroofing.com

1.4 Emergency telephone number

Association / Organisation:National Poisons Information Service
Emergency telephone numbers:0344 892 0111 (Healthcare professionals only)
Other emergency telephone numbersAlumasc Building Products: +44 17 4464 8400
(Mon-Thurs – 08.30-17.00 Fri – 08.30-16.00)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Considered a hazardous mixture according to Reg. (EC) No 1272/2008 and their amendments. Classified as Dangerous Goods for transport purposes.

Classification according to Regulation (EC) No. 1272/2008 [CLP][1]:
H334 - Sensitisation (Respiratory) Category 1, H319 - Serious Eye Damage/Eye Irritation Category 2, H317 - Sensitisation (Skin) Category 1, H351 - Carcinogenicity Category 2.

Legend:
1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567.

2.2 Label elements

Hazard pictures:

Signal word: Danger.

Hazard statements:
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.

Supplementary statements: EUH204 Contains isocyanates. May produce an allergic reaction.

Precautionary statements prevention:
P201 Obtain special instructions before use.
P261 Avoid breathing mist/vapours/spray.
P264 Wash hands, forearms and face thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 [In case of inadequate ventilation] wear respiratory protection.
P272 Contaminated work clothing should not be allowed out of the workplace.

Precautionary statements response: P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313 IF exposed or concerned: Get medical advice/ attention.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/ physician/first aider.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

Precautionary statements storage: P405 Store locked up.

Precautionary statements disposal: P501: Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

2.3 Other hazards

Polymeric Diphenylmethane Diisocyanate: Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (restrictions may apply).

3. COMPOSITION AND INFORMATION ABOUT THE COMPONENTS

3.1 Substances

See 'Composition on ingredients' in Section 3.2.

3.2 Mixtures

1. CAS No 2. EC No 3. Index No 4. REACH No	**% [weight]**	**Name**	**Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567**	**Nanoform Particle Characteristics**
1. 9016-87-9 2. Not available 3. Not available 4. Not available	5-15	Polymeric Diphenylmethane Diisocyanate	Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Skin) Category 1, Sensitisation (Respiratory) Category 1, Carcinogenicity Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , Specific Target Organ Toxicity - Repeated Exposure Category 2; H332, H315, H319, H317, H334, H351, H335, H373, EUH204 [1]	Not available
Legend:	1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties			

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact: If product comes in contact with eyes:
Immediately hold eyelids apart and flush the eye continuously with running water.
Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin contact: If skin contact occurs:
Immediately remove all contaminated clothing, including footwear.
Flush skin and hair with running water (and soap if available).
Seek medical attention in event of irritation.

Inhalation: If fumes or combustion products are inhaled remove from contaminated area.
Lay patient down. Keep warm and rested.
Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
Transport to hospital, or doctor, without delay.
Following uptake by inhalation, move person to an area free from risk of further exposure. Oxygen or artificial respiration should be administered as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic.
A physician should be consulted.

Ingestion: Immediately give a glass of water.
First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11.

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

For sub-chronic and chronic exposures to isocyanates:

- This material may be a potent pulmonary sensitiser which causes bronchospasm even in patients without prior airway hyperreactivity.
- Clinical symptoms of exposure involve mucosal irritation of respiratory and gastrointestinal tracts.
- Conjunctival irritation, skin inflammation (erythema, pain vesiculation) and gastrointestinal disturbances occur soon after exposure. Pulmonary symptoms include cough, burning, substernal pain and dyspnoea.
- Some cross-sensitivity occurs between different isocyanates.
- Noncardiogenic pulmonary oedema and bronchospasm are the most serious consequences of exposure. Markedly symptomatic patients should receive oxygen, ventilatory support and an intravenous line.
- Treatment for asthma includes inhaled sympathomimetics (epinephrine [adrenalin], terbutaline) and steroids. Activated charcoal (1 g/kg) and a cathartic (sorbitol, magnesium citrate) may be useful for ingestion.
- Mydriatics, systemic analgesics and topical antibiotics (Sulamyd) may be used for corneal abrasions. There is no effective therapy for sensitised workers.

[Ellenhorn and Barceloux; Medical Toxicology].
NOTE: Isocyanates cause airway restriction in naive individuals with the degree of response dependant on the concentration and duration of exposure. They induce smooth muscle contraction which leads to bronchoconstrictive episodes. Acute changes in lung function, such as decreased FEV1, may not represent sensitivity.
[Karol & Jin, Frontiers in Molecular Toxicology, pp 56-61, 1992].
Personnel who work with isocyanates, isocyanate prepolymers or polyisocyanates should have a pre-placement medical examination and periodic examinations thereafter, including a pulmonary function test. Anyone with a medical history of chronic respiratory disease, asthmatic or bronchial attacks, indications of allergic responses, recurrent eczema or sensitisation conditions of the skin should not handle or work with isocyanates. Anyone who develops chronic respiratory distress when working with isocyanates should be removed from exposure and examined by a physician. Further exposure must be avoided if a sensitivity to isocyanates or polyisocyanates has developed.

5. FIRE-FIGHTING MEASSURES

5.1 Extinguishing media

DO NOT EXTINGUISH BURNING GAS UNLESS LEAK CAN BE STOPPED SAFELY.
OTHERWISE: LEAVE GAS TO BURN.

For small fire:
Dry chemical, CO2 or water spray to extinguish gas (only if absolutely necessary and safe to do so).
DO NOT use water jets.

5.2 Special hazards arising from the substance or mixture

Fire incompatibility:
Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

5.3 Advice for fire-fighters

Fire-fighting:
- Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.

Fire/explosion hazard:
- Combustible.
- Moderate fire hazard when exposed to heat or flame.
- When heated to high temperatures decomposes rapidly generating vapour which pressures and may then rupture containers with release of flammable and highly toxic isocyanate vapour.

Combustion products include:
- carbon dioxide (CO2)
- isocyanates
- hydrogen cyanide
- and minor amounts of nitrogen oxides (NOx)

other pyrolysis products typical of burning organic material.
May emit corrosive fumes.
When heated at high temperatures many isocyanates decompose rapidly generating a vapour which pressurises containers, possibly to the point of rupture. Release of toxic and/or flammable isocyanate vapours may then occur.

6. ACCIDENTIAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

See Section 8.

6.2 Environmental precautions

See Section 12.

6.3 Methods and material for containment and cleaning up

Minor spills:
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Liquid Isocyanates and high isocyanate vapour concentrations will penetrate seals on self contained breathing apparatus - SCBA should be used inside encapsulating suit where this exposure may occur.

Major spills:
For isocyanate spills of less than 40 litres (2 m2):
Evacuate area from everybody not dealing with the emergency, keep them upwind and prevent further access, remove ignition sources and, if inside building, ventilate area as well as possible.
- Notify supervision and others as necessary.
- Put on personal protective equipment (suitable respiratory protection, face and eye protection, protective suit, gloves and impermeable boots).
- Avoid contamination with water, alkalies and detergent solutions.
- Material reacts with water and generates gas, pressurises containers with even drum rupture resulting.
- DO NOT reseal container if contamination is suspected.

Moderate hazard:
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard. Burn issuing gas at vent pipes.

6.4 Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Safe handling:
Avoid all personal contact, including inhalation.
Wear protective clothing when risk of exposure occurs.
Use in a well-ventilated area.
DO NOT allow clothing wet with material to stay in contact with skin

Fire & explosion protection:
See Section 5.

Other information:
Consider storage under inert gas.
for commercial quantities of isocyanates:
·Isocyanates should be stored in adequately bunded areas. Nothing else should be kept within the same bunding. Pre-polymers need not be segregated.

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.

7.2 Conditions for safe storage, including any incompatibilities

Suitable container:

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility:

Avoid reaction with water, alcohols and detergent solutions. Isocyanates are electrophiles, and as such they are reactive toward a variety of
nucleophiles including alcohols, amines, and even water. Upon treatment with an alcohol, an isocyanate forms a urethane linkage.

- A range of exothermic decomposition energies for isocyanates is given as 20-30 kJ/mol.
- The relationship between energy of decomposition and processing hazards has been the subject of discussion; it is suggested that values of energy released per unit of mass, rather than on a molar basis (J/g) be used in the assessment.
- For example, in "open vessel processes" (with man-hole size openings, in an industrial setting), substances with exothermic decomposition energies below 500 J/g are unlikely to present a danger, whilst those in "closed vessel processes" (opening is a safety valve or bursting disk) present some danger where the decomposition energy exceeds 150 J/g.

						
+	X	+	O	+	+	+

X - Must not be stored together.
O - May be stored together with specific preventions.
+ - May be stored together.

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

7.3 Specific end uses(s)

See Section 1.2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Not available	Not available	Not available

* Values for general population.

Occupational Exposure Limits (OEL):

Ingredient data:

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Europe ECHA Occupational exposure limits - Activity list	Polymeric Diphenylmethane Diisocyanate	Not available	Not available	Not available	Not available	Not available

Emergency limits:

Ingredient	TEEL-1	TEEL-2	TEEL-3
Polymeric Diphenylmethane Diisocyanate	0.15 mg/m3	3.6 mg/m3	22 mg/m3

Ingredient	Original IDLH	Revised IDLH
Polymeric Diphenylmethane Diisocyanate	Not available	Not available

8.2 Exposure controls

8.2.1. Appropriate engineering Controls:	All processes in which isocyanates are used should be enclosed wherever possible. Total enclosure, accompanied by good general ventilation, should be used to keep atmospheric concentrations below the relevant exposure standards. If total enclosure of the process is not feasible, local exhaust ventilation may be necessary. Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
8.2.2. Personal protection:	
Eye and face protection:	Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
Skin protection:	See Hand Protection below.
Hands/feet protection:	NOTE: The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

	The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Do NOT wear natural rubber (latex gloves). Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves. Protective gloves and overalls should be worn as specified in the appropriate national standard. Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated. DO NOT use skin cream unless necessary and then use only minimum amount. Isocyanate vapour may be absorbed into skin cream and this increases hazard.
Body protection:	See Other Protection below.
Other protection:	All employees working with isocyanates must be informed of the hazards from exposure to the contaminant and the precautions necessary to prevent damage to their health. They should be made aware of the need to carry out their work so that as little contamination as possible is produced, and of the importance of the proper use of all safeguards against exposure to themselves and their fellow workers. Adequate training, both in the proper execution of the task and in the use of all associated engineering controls, as well as of any personal protective equipment, is essential. Overalls. P.V.C apron. Barrier cream.

Respiratory protection:
Full face respirator with supplied air.

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

For spraying or operations which might generate aerosols:
Full face respirator with supplied air.
In certain circumstances, personal protection of the individual employee is necessary. Personal protective devices should be regarded as being supplementary to substitution and engineering control and should not be used in preference to them as they do nothing to eliminate the hazard.
However, in some situations, minimising exposure to isocyanates by enclosure and ventilation is not possible, and occupational exposure standards may be exceeded, particularly during on-site mixing of paints, spray-painting, foaming and maintenance of machine and ventilation systems. In these situations, air-line respirators or self-contained breathing apparatus complying with the appropriate nationals standard must be used.
Organic vapour respirators with particulate pre- filters and powered, air-purifying respirators are NOT suitable.
Personal protective equipment must be appropriately selected, individually fitted and workers trained in their correct use and maintenance. Personal protective equipment must be regularly checked and maintained to ensure that the worker is being protected.
Air- line respirators or self-contained breathing apparatus complying with the appropriate national standard should be used during the clean-up of spills and the repair or clean-up of contaminated equipment and similar situations which cause emergency exposures to hazardous atmospheric concentrations of isocyanate.

8.2.3. Environmental exposure controls:

See Section 12.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

Appearance:	Moisture sensitive. Brown		
Physical state:	Liquid	**Relative density (Water = 1):**	1.0-1.2
Odour:	Not applicable	**Partition coefficient n-octanol/water:**	Not applicable
Odour threshold:	Not available	**Auto-ignition temperature (°C):**	Not applicable
pH (as supplied):	Not available	**Decomposition temperature:**	Not applicable
Melting point/freezing point (°C):	Not applicable	**Viscosity (cSt):**	5000.000-8333.333
Initial boiling point and boiling range (°C):	Not applicable	**Molecular weight (g/mol):**	Not applicable
Flash point (°C):	>200	**Taste:**	Not applicable
Evaporation rate:	Not applicable	**Explosive properties:**	Not applicable
Flammability:	Not available	**Oxidising properties:**	Not applicable
Upper Explosive Limit (%):	Not available	**Surface Tension (dyn/cm or mN/m):**	Not applicable
Lower Explosive Limit (%):	Not available	**Volatile Component (%vol):**	Not applicable
Vapour pressure (kPa):	Not available	**Gas group:**	Not applicable
Solubility in water:	Immiscible	**pH as a solution (1%):**	Not applicable
Vapour density (Air = 1):	Not available	**VOC g/L:**	Not applicable
Nanoform Solubility	Not available	**Nanoform Particle Characteristics:**	Not applicable
Particle Size	Not available		

9.2 Other information

Not applicable.

10. STABILITY AND REACTIVITY

10.1 Reactivity

See Section 7.2.

10.2 Chemical stability

Unstable in the presence of incompatible materials.
Product is considered stable.
Hazardous polymerisation will not occur.

10.3 Possibility of hazardous reactions

See Section 7.2.

10.4 Conditions to avoid

See Section 7.2.

10.5 Incompatible materials

See Section 7.2.

10.6 Hazardous decomposition products

See Section 5.3

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Inhaled:	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects. The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting.
Ingestion:	The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.
Skin contact:	There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye:	This material can cause eye irritation and damage in some persons.
Chronic:	There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Persons with a history of asthma or other respiratory problems or are known to be sensitised, should not be engaged in any work involving the handling of isocyanates. The chemistry of reaction of isocyanates, as evidenced by MDI, in biological milieu is such that in the event of a true exposure of small MDI doses to the mouth, reactions will commence at once with biological macromolecules in the buccal region and will continue along the digestive tract prior to reaching the stomach. Reaction products will be a variety of polyureas and macromolecular conjugates with for example mucus, proteins and cell components. Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia.

Euroroof Insulation Adhesive:

Toxicity	**Irritation**
Not available	Not available

Polymeric Diphenylmethane Diisocyanate:

Toxicity	**Irritation**
Dermal (rabbit) LD50: >9400 mg/kg[2]	Eye (rabbit): 100 mg – mild
Inhalation(Rat) LC50; 0.49 mg/L4h[2]	
Oral(Rat) LD50; 43000 mg/kg[2]	

Legend:
1. Value obtained from Europe ECHA Registered Substances – Acute toxicity; 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS – Register of Toxic Effect of chemical Substances.

Polymeric Diphenylmethane Diisocyanate:	product Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

	Aromatic and aliphatic diisocyanates may cause airway toxicity and skin sensitization. Monomers and prepolymers exhibit similar respiratory effect. Of the several members of diisocyanates tested on experimental animals by inhalation and oral exposure, some caused cancer while others produced a harmless outcome. The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
Euroroof Insulation Adhesive & Polymeric Diphenylmethane Diisocyanate:	Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure. The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia.

Acute Toxicity	✗	**Carcinogenicity**	✓
Skin Irritation/Corrosion	✗	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✗
Respiratory or Skin Sensitisation	✓	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend:
✗ - Data either not available or does not fill the criteria for classification.
✓ - Data available to make classification.

11.2.1 Endocrine Disruption Properties

Not available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Euroroof Insulation Adhesive:

End point	Test duration (Hr)	Species	Value	Source
Not available	Not available	Not available	Not available	Not available

Polymeric Diphenylmethane Diisocyanate:

End point	Test duration (Hr)	Species	Value	Source
Not available	Not available	Not available	Not available	Not available

Legend:
Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data.

For Polyisocyanates:
Polyisocyanates are not readily biodegradable. However, due to other elimination mechanisms (hydrolysis, adsorption), long retention times in water are not to be expected. The resulting polyurea is more or less inert and, due to its molecular size, not bioavailable.

For Isocyanate Monomers:
Environmental Fate: Isocyanates, (di- and polyfunctional isocyanates), are commonly used to make various polymers, such as polyurethanes. Polyurethanes find significant application in the manufacture of rigid and flexible foams. They are also used in the production of adhesives, elastomers, and coatings.
DO NOT discharge into sewer or waterways.

12.2 Persistence and degradability

No data available for all ingredients.

12.3 Bioaccumulation potential

No data available for all ingredients.

12.4 Mobility in soil

No data available for all ingredients.

12.5 Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not available	Not available	Not available
PBT	✗	✗	✗
vPvB	✗	✗	✗

PBT Criteria fulfilled?	No
vPvB	No

12.6 Endocrine Disruption Properties

Not available.

12.7. Other adverse effects

Not available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal Considerations:	Disposal of this product and its packaging must comply with all applicable environmental protection and waste disposal legislation, including any requirements set by local authorities. Any unwanted or non-recyclable material should be disposed of through a licensed waste disposal contractor. Transportation of such waste may be subject to ADR (International Carriage of Dangerous Goods by Road) regulations and must be managed in accordance with those requirements.
Waste code:	08 04 09* waste adhesives and sealants containing organic solvents or other hazardous substances
Special precautions:	This material and its container must be disposed of in a safe way. Caution should be exercised when handling empty containers that have not been properly cleaned or rinsed, as they may retain hazardous residues. Spillage and wash water from cleaning tools must be prevented from entering soil, watercourses, drains, or sewer systems. Empty containers should be directed to authorised waste disposal or appropriate local recycling facilities.
Further information available via:	https://www.alumascroofing.com/downloads/disposal-guides/

14. TRANSPORT INFORMATION

Labels required:

Marine Pollutant: No.

Hazchem: Not applicable.

Land transport (ADR):

14.1 UN number	Not applicable	
14.2 UN proper shipping name	Not applicable	
14.3 Transport hazard class(es)	Class: Subrisk:	Not applicable Not applicable
14.4 Packing group	Not applicable	
14.5 Environmental hazard	Not applicable	
14.6 Special precautions for user	Hazard identification (Kemler): Classification code: Hazard label: Special provisions: Limited quantity: Tunnel restriction code:	Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable

Air transport (ICAO-IATA/DGR):

14.1 UN number	Not applicable	
14.2 UN proper shipping name	Not applicable	
14.3 Transport hazard class(es)	ICAO/IATA class: ICAO/IATA subrisk: ERG code:	Not applicable Not applicable Not applicable
14.4 Packing group	Not applicable	
14.5 Environmental hazard	Not applicable	
14.6 Special precautions for user	Special provisions: Cargo only packing instruction: Cargo only maximum qty/pack: Passenger and cargo packing instruction: Passenger and cargo maximum qty/pack: Passenger and cargo limited qty packing instructions: Passenger and cargo limited maximum qty/pack:	Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable

Sea transport (IMDG-Code/GGVSee):

14.1 UN number	Not applicable	
14.2 UN proper shipping name	Not applicable	
14.3 Transport hazard class(es)	IMDG class: IMDG subrisk:	Not applicable Not applicable
14.4 Packing group	Not applicable	
14.5 Environmental hazard	Not applicable	
14.6 Special precautions for user	EMS number: Special provisions: Limited quantities:	Not applicable Not applicable Not applicable

Inland waterways transport (ADN):

14.1 UN number	Not applicable	
14.2 UN proper shipping name	Not applicable	
14.3 Transport hazard class(es)	Class: Subrisk:	Not applicable Not applicable
14.4 Packing group	Not applicable	
14.5 Environmental hazard	Not applicable	
14.6 Special precautions for user	Classification code: Special provisions: Limited quantity: Equipment required: Fire cones numbers:	Not applicable Not applicable Not applicable Not applicable Not applicable

14.7. Transport in bulk according to Annex II of MARPOL and the IBC code

Not applicable.

14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product Name	Group
Polymeric Diphenylmethane Diisocyanate	Not available

14.9. Transport in bulk in accordance with the ICG Code

Product Name	Ship Type
Polymeric Diphenylmethane Diisocyanate	Not available

15. REGULATORY INFORMATION

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

Methylene Chloride is found on the following regulatory lists:

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

ECHA summary:

Ingredient	CAS number	Index No	ECHA Dossier
polymeric diphenylmethane diisocyanate	9016-87-9	Not available	01-2119457024-46-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2; Eye Irrit. 2; Acute Tox. 2; Resp. Sens. 1; STOT SE 3; STOT RE 2	GHS08; GHS06; Dgr	H315; H319; H330; H334; H335; H373
2	Eye Irrit. 2; Resp. Sens. 1; STOT SE 3; STOT RE 2; Skin Sens. 1; STOT SE 3; Carc. 2; STOT RE 2; STOT RE 2; STOT SE 3; STOT SE 3; STOT RE 2; STOT SE 3; STOT RE 2; STOT SE 3; STOT RE 2; Acute Tox. 4; Acute Tox. 4; Skin Corr. 1B; Aquatic Chronic 1; STOT SE 3; STOT RE 2; STOT SE 3; STOT RE 2; Muta. 2; Acute Tox. 1; STOT SE 3; STOT SE 3; STOT RE 2; STOT SE 3; STOT SE 3; STOT SE 3; STOT RE 2; STOT SE 3; STOT RE 2; STOT RE 2; STOT RE 2; STOT SE 3; STOT SE 3; STOT RE 2; STOT SE 3; STOT RE 2; STOT SE 3; STOT RE 2; STOT SE 3; STOT RE 2; STOT RE 2; STOT SE 3; Carc. 2; STOT RE 2	GHS08; GHS06; Dgr; GHS05; GHS09	H319; H334; H335; H373; H317; H351; H302; H312; H314; H341; H330; H410
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (polymeric diphenylmethane diisocyanate)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No (polymeric diphenylmethane diisocyanate)
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory. No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets).

16. OTHER INFORMATION

Full text risk and hazard codes:
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H330 Fatal if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H373 May cause damage to organs through prolonged or repeated exposure.

SDS Version summary:

Version	Date of Update	Section Updated
2.0	30/01/2023	Template Change
2.1	27/05/2025	Section 13 update

Other information:
Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

Definitions and abbreviations:
PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard

OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory.
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

The contents and format of this SDS are in accordance with EEC Commission Directive 1999/45/EC, 67/548/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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