ROOF ACCESSORIES

# Safety Data Sheet
## MOY Insulation Adhesive

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

| | | | |
|---|---|---|---|
| 1.1 | Product Identifier | | |
| | Product name | MOY Insulation Adhesive | |
| | Chemical name | Not applicable | |
| | Synonyms | Not available | |
| | Chemical formula | Not applicable | |
| | Other means of identification | Not applicable | |
| | | | |
| 1.2 | Relevant identified uses of the substance or mixture and uses advised against | | |
| | Use of substance / mixture: | Adhesive | |
| | | Not applicable | |
| | | | |
| 1.3 | Details of the supplier of the safety data sheet | Moy Materials (UK) Ltd<br>6 Mackean Street<br>Paisley<br>Renfrewshire<br>PA3 1QP<br>UK<br>+44 (0) 141 840 4660<br>E: enquiries@moymaterials.co.uk<br>W: www.moymaterials.com | |
| | | | |
| 1.4 | Emergency telephone numbers | | |
| | Association / Organisation | National Poisons Information Service | |
| | Emergency telephone Number | 0344 892 0111 (Healthcare professionals only) | |

### SECTION 2: HAZARD IDENTIFICATION

| | | | |
|---|---|---|---|
| 2.1 | Classification of the substance or mixture | | |
| | Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 [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;<br>2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567* | |
| 2.2 | Label elements | | |
| | Hazard pictogram(s) | | |
| | |  | |
| | Signal word | Danger | |
| | | | |
| | Hazard statement(s) | | |
| | H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. | |
| | H319 | Causes serious eye irritation. | |
| | H317 | May cause an allergic skin reaction. | |

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| | H351 | Suspected of causing cancer. |
| | | |
| | Supplementary statement(s) | |
| | EUH204 | Contains isocyanates. May produce an allergic reaction. |
| | | |
| | Precautionary statement(s) 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 statement(s) 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 statement(s) Storage | |
| | P405 | Store locked up. |
| | | |
| | Precautionary statement(s) Disposal | |
| | P501 | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| | | | |
|---|---|---|---|
| 3.1 | Substances | | |
| | See 'Composition on ingredients' in Section 3.2 | | |
| 3.2 | Mixtures | | |

| 1. CAS No<br>2. EC No<br>3. Index No<br>4. REACH No | %[weight] | Name | Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 | SCL / M-Factor | Nanoform Particle Characteristics |
|---|---|---|---|---|---|
| 1. 9016-87-9<br>2. Not Available<br>3. Not Available<br>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 | 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 IOEL Vs available; [e] Substance identified as having endocrine disrupting properties* | | | | |

## SECTION 4: FIRST AID MEASURES

| | Description of first aid measures | |
|---|---|---|
| 4.1 | Eye contact | If this product comes in contact with the eyes:<br>- Immediately hold eyelids apart and flush the eye continuously with running water.<br>- 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.<br>- 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.<br>- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| | Skin contact | If skin contact occurs:<br>- Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available).<br>- Seek medical attention in event of irritation. |
| | Inhalation | - If fumes or combustion products are inhaled remove from contaminated area.<br>- Lay patient down. Keep warm and rested.<br>- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.<br>- 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.<br>- Transport to hospital, or doctor, without delay.<br>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.<br>A physician should be consulted. |
| | Ingestion | - Immediately give a glass of water. |

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| | | - 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:<br>- 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.<br>- Conjunctival irritation, skin inflammation (erythema, pain vesiculation) and gastrointestinal disturbances occur soon after exposure. Pulmonary symptoms include cough, burning, substernal pain and dyspnoea.<br>- Some cross-sensitivity occurs between different isocyanates.<br>- Noncardiogenic pulmonary oedema and bronchospasm are the most serious consequences of exposure. Markedly symptomatic patients should receive oxygen, ventilatory support and an intravenous line.<br>- 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.<br>- Mydriatics, systemic analgesics and topical antibiotics (Sulamyd) may be used for corneal abrasions. There is no effective therapy for sensitised workers.<br>[Ellenhorn and Barceloux; Medical Toxicology]<br>NOTE: Isocyanates cause airway restriction in naive individuals with the degree of response dependent 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.<br>[Karol & Jin, Frontiers in Molecular Toxicology, pp 56-61, 1992]<br>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. | |

## SECTION 5: FIREFIGHTING MEASURES

| | | |
|---|---|---|
| 5.1 | Extinguishing media | |
| | Extinguishing media | - Small quantities of water in contact with hot liquid may react violently with generation of a large volume of rapidly expanding hot sticky semi-solid foam. Presents additional hazard when fire fighting in a confined space.<br>- Cooling with flooding quantities of water reduces this risk. Foam.<br>- Dry chemical powder.<br>- BCF (where regulations permit). |
| | | |
| 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 firefighters | |
| | Fire Fighting | - Alert Fire Brigade and tell them location and nature of hazard.<br>- Wear full body protective clothing with breathing |

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| | | apparatus.<br>- Prevent, by any means available, spillage from entering drains or water course. |
| | | |
| | Fire/Explosion Hazard | - Combustible.<br>- Moderate fire hazard when exposed to heat or flame.<br>- 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.<br>Combustion products include:<br>• carbon dioxide (CO2)<br>• isocyanate<br>• hydrogen cyanide<br>• and minor amounts of<br>• nitrogen oxides (NOx)<br>• other pyrolysis products typical of burning organic material.<br>- May emit corrosive fumes.<br>- When heated at high temperatures many isocyanates decompose rapidly generating a vapour which pressurises containers, possibly to the point of rupture.<br>- Release of toxic and/or flammable isocyanate vapours may then occur |
| | | |

## SECTION 6: ACCIDENTAL 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.<br>- Clean up all spills immediately.<br>- Avoid breathing vapours and contact with skin and eyes. |
| | Major Spills | - 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.<br>For isocyanate spills of less than 40 litres (2 $m^2$):<br>- 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.<br>- Notify supervision and others as necessary.<br>- Put on personal protective equipment (suitable respiratory protection, face and eye protection, protective suit, gloves and impermeable boots).<br>- Avoid contamination with water, alkalies and detergent solutions.<br>- Material reacts with water and generates gas, pressurises containers with even drum rupture |

| | | |
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| | | resulting.<br>- DO NOT reseal container if contamination is suspected.<br>- Moderate hazard.<br>- Clear area of personnel and move upwind.<br>- Alert Fire Brigade and tell them location and nature of hazard.<br>Moderate hazard.<br>- Clear area of personnel and move upwind.<br>- Alert Fire Brigade and tell them location and nature of hazard. |
| 6.4 | Reference to other sections | |
| | Personal Protective Equipment advice is contained in Section 8 of the SDS. | |

## SECTION 7: HANDLING AND STORAGE

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|---|---|---|
| 7.1 | Precautions for safe handling | |
| | Safe handling | - Avoid all personal contact, including inhalation.<br>- Wear protective clothing when risk of exposure occurs.<br>- Use in a well-ventilated area.<br>- DO NOT allow clothing wet with material to stay in contact with skin |
| | Fire and explosion protection | See Section 5 |
| | Other information | Consider storage under inert gas.<br>for commercial quantities of isocyanates:<br>· Isocyanates should be stored in adequately bunded areas. Nothing else should be kept within the same bunding. Pre-polymers need not be segregated.<br>- Store in original containers.<br>- Keep containers securely sealed.<br>- No smoking, naked lights or ignition sources. |
| 7.2 | Conditions for safe storage, including any incompatibilities | |
| | Suitable container | - Metal can or drum<br>- Packaging as recommended by manufacturer.<br>- 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.<br>- A range of exothermic decomposition energies for isocyanates is given as 20-30 kJ/mol.<br>- 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.<br>- 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 — *Must not be stored together*
0 — *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 use(s)

See Section 12

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

| Ingredient | DNELs<br>Exposure Pattern Worker | PNECs<br>Compartment |
|---|---|---|
| Not Available | Not Available | Not Available |

*Values for 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 |
| **Source** | **Ingredient** | **Material name** | **TWA** | **STEL** | **Peak** | **Notes** |
| UK Workplace Exposure Limits (WELs) | polymeric diphenylmethane diisocyanate | Isocyanates, all (as -NCO) Except methyl isocyanate | 0.02 mg/m3 | 0.07 mg/m3 | Not available | Sen |

| 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

- 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.

| | | |
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| | engineering controls | 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.<br>The basic types of engineering controls are:<br>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.<br>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:<br>- 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.<br>- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.<br>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.<br>Where the chemical is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.<br>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.<br>- Do NOT wear natural rubber (latex gloves).<br>- Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves.<br>- Protective gloves and overalls should be worn as specified in the appropriate national standard.<br>- Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated.<br>- DO NOT use skin cream unless necessary and then use only minimum amount.<br>- 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.<br>- Overalls.<br>- P.V.C apron.<br>- Barrier cream. |
| | Respiratory protection | Full face respirator with supplied air.<br>- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.<br>- The wearer must be warned to leave the contaminated area |

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| | | 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.<br>- 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<br>For spraying or operations which might generate aerosols:<br>Full face respirator with supplied air.<br>- 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.<br>- 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 national standard must be used.<br>- Organic vapour respirators with particulate pre- filters and powered, air-purifying respirators are NOT suitable.<br>- 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.<br>- 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 |

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | | | | |
|---|---|---|---|---|
| Appearance | Moisture sensitive.<br>Brown | | | |
| | | | | |
| Physical state | Liquid | | Relative density (Water = 1) | 1.0-1.2 |
| Odour | Characteristic | | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | Not Available | | Decomposition temperature | Not Available |
| Melting point / | Not Available | | Viscosity (cSt) | 5000.000-8333.333 |

| | | | | | |
|---|---|---|---|---|---|
| | freezing point (°C) | | | | |
| | Initial boiling point and boiling range (°C) | Not Available | | Molecular weight (g/mol) | Not Available |
| | Flash point (°C) | >200 | | Taste | Not Available |
| | Evaporation rate | Not Available | | Explosive properties | Not Available |
| | Flammability | Not Available | | Oxidising properties | Not Available |
| | Upper Explosive Limit (%) | Not Available | | Surface Tension (dyn/cm or mN/m) | Not Available |
| | Lower Explosive Limit (%) | Not Available | | Volatile Component (%vol) | Not Available |
| | Vapour pressure (kPa) | Not Available | | Gas group | Not Available |
| | Solubility in water | Not Available | | pH as a solution (Not Available%) | Not Available |
| | Vapour density (Air = 1) | Not Available | | VOC g/L | Not Available |
| | Nanoform Solubility | Not Available | | Nanoform Particle Characteristics | Not Available |
| | Particle Size | Not Available | | | |

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| 9.2 | Other information | |
| | Other information | Not available. |

## SECTION 10: STABILITY AND REACTIVITY

| | | | |
|---|---|---|---|
| 10.1 | Reactivity | See section 7.2 | |
| 10.2 | Chemical stability | - Unstable in the presence of incompatible materials.<br>- Product is considered stable.<br>- Hazardous polymerisation will not occur. | |
| 10.3 | Possibility of hazardous reactions | See section 7.3 | |
| 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 | |

## SECTION 11: TOXICOLOGICAL INFORMATION

# Safety Data Sheet
## MOY Insulation Adhesive

| | | | |
|---|---|---|---|
| 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.<br>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.<br>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.<br>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.<br>Respiratory sensitisation may result in allergic/asthma like responses; from coughing and minor breathing difficulties to bronchitis with wheezing, gasping.<br>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. | |
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|---|---|---|
| | Moy Insulation Adhesive | <table><tr><th>TOXICITY</th><th>TOXICITY</th></tr><tr><td>Not Available</td><td>Not Available</td></tr></table> |
| | Polymeric diphenylmethane diisocyanate | <table><tr><th>TOXICITY</th><th>IRRITATION</th></tr><tr><td>Dermal (rabbit) LD50: >9400 mg/kg[2]</td><td>Eye (rabbit): 100 mg - mild</td></tr><tr><td>Inhalation (Rat) LC50; 0.49 mg/L4h[2]</td><td></td></tr><tr><td>Oral (Rat) LD50; 43000 mg/kg[2]</td><td></td></tr></table> |
| | *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<br>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.<br>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>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.<br>The substance is classified by IARC as Group 3:<br>NOT classifiable as to its carcinogenicity to humans.<br>Evidence of carcinogenicity may be inadequate or limited in animal testing. |
| | Moy 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.<br>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.<br>The following information refers to contact allergens as a group and may not be specific to this product.<br>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.<br>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. | |
| | | | |

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|---|---|---|---|
| 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 | |

## SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Moy Insulation Adhesive

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

Polymeric diphenylmethane diisocyanate

| Endpoint | 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

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| | No Data available for all ingredients | No Data available for all ingredients |

12.3 Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| | No Data available for all ingredients |

12.4 Mobility in soil

| Ingredient | Mobility |
|---|---|
| | 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 | |

## SECTION 13: DISPOSAL CONSIDERATIONS

| | | |
|---|---|---|
| 13.1 | Waste treatment methods | |
| | Product / Packaging disposal | - Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible.<br>Otherwise:<br>- If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.<br>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.<br>- DO NOT allow wash water from cleaning or process equipment to enter drains.<br>- It may be necessary to collect all wash water for treatment before disposal.<br>- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.<br>- DO NOT recycle spilled material.<br>- Consult State Land Waste Management Authority for disposal.<br>- Neutralise spill material carefully and decontaminate empty containers and spill residues with 10% ammonia solution plus detergent or a proprietary decontaminant prior to disposal. |
| | Waste treatment options | Not Available |
| | Sewage disposal options | Not Available |

## SECTION 14: TRANSPORT INFORMATION

| | | |
|---|---|---|
| | Labels Required | |
| | Marine Pollutant | No |

# Safety Data Sheet
## MOY Insulation Adhesive

| | | | |
|---|---|---|---|
| | HAZCHEM | Not Applicable | |
| | | | |
| Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS | | | |
| | | | |
| 14.1 | UN Number | Not Applicable | |
| | | | |
| 14.2 | UN proper shipping name | Not Applicable | |
| | | | |
| 14.3 | Transport hazard class(es) | Class: | Not Applicable |
| | | Subrisk: | Not Applicable |
| | | | |
| 14.4 | Packing group | Not Applicable | |
| | | | |
| 14.5 | Environmental hazard | Not Applicable | |
| | | | |
| 14.6 | Special precautions for user | Hazard identification (Kemler): | Not Applicable |
| | | Classification code: | Not Applicable |
| | | Hazard Label: | Not Applicable |
| | | Special provisions: | Not Applicable |
| | | Limited quantity: | Not Applicable |
| | | Tunnel Restriction Code: | Not Applicable |
| | | | |
| Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS | | | |
| | | | |
| 14.1 | UN Number | Not Applicable | |
| | | | |
| 14.2 | UN proper shipping name | Not Applicable | |
| | | | |
| 14.3 | Transport hazard class(es) | ICAO/IATA Class: | Not Applicable |
| | | ICAO / IATA Subrisk: | Not Applicable |
| | | ERG Code: | Not Applicable |
| | | | |
| 14.4 | Packing group | Not Applicable | |
| | | | |
| 14.5 | Environmental hazard | Not Applicable | |
| | | | |
| 14.6 | Special precautions for user | Special provisions: | Not Applicable |
| | | Cargo Only Packing Instructions: | Not Applicable |
| | | Cargo Only Maximum Qty / Pack: | Not Applicable |
| | | Passenger and Cargo Packing Instructions: | Not Applicable |
| | | Passenger and Cargo Maximum Qty / Pack: | Not Applicable |
| | | Passenger and Cargo Limited Quantity Packing Instructions: | Not Applicable |
| | | Passenger and Cargo Limited Maximum Qty / Pack: | Not Applicable |
| | | | |
| Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS | | | |
| | | | |
| 14.1 | UN Number | Not Applicable | |
| | | | |

| | | | |
|---|---|---|---|
| 14.2 | UN proper shipping name | Not Applicable | |
| | | | |
| 14.3 | Transport hazard class(es) | IMDG Class: | Not Applicable |
| | | IMDG Subrisk: | Not Applicable |
| | | | |
| 14.4 | Packing group | Not Applicable | |
| | | | |
| 14.5 | Environmental hazard | Not Applicable | |
| | | | |
| 14.6 | Special precautions for user | EMS Number: | Not Applicable |
| | | Special provisions: | Not Applicable |
| | | Limited Quantities: | Not Applicable |
| | | | |
| Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS | | | |
| | | | |
| 14.1 | UN Number | Not Applicable | |
| | | | |
| 14.2 | UN proper shipping name | Not Applicable | |
| | | | |
| 14.3 | Transport hazard class(es) | Not Applicable | Not Applicable |
| | | | |
| 14.4 | Packing group | Not Applicable | |
| | | | |
| 14.5 | Environmental hazard | Not Applicable | |
| | | | |
| 14.6 | Special precautions for user | Classification code: | Not Applicable |
| | | Special provisions: | Not Applicable |
| | | Limited quantity: | Not Applicable |
| | | Environment required: | Not Applicable |
| | | Fire cones number: | 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 |

## SECTION 15: REGULATORY INFORMATION

| | | |
|---|---|---|
| 15.1 | Safety, health and environmental regulations/legislation specific for the substance or mixture | |
| | | |
| | polymeric diphenylmethane diisocyanate is found on the following regulatory lists: | |
| | | |

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 | Not Available |

| 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; STOT SE 3; STOT RE 2; 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; Acute Tox. 4; Acute Tox. 4; Aquatic Chronic 1; STOT SE 3; STOT RE 2; STOT SE 3; STOT RE 2; Muta. 2; 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; H330; H334; H335; H373; H317; H351; H302; H312; H314; H341; H410 |

*Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.*

National Inventory Status

| 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. These ingredients may be exempt or will require registration.* |
| | | |

## SECTION 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. |
| | H410 | Very toxic to aquatic life with long lasting effects. |
| | | |
| | 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.<br><br>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.<br><br>For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards: EN 166 Personal eye-protection<br>EN 340 Protective clothing<br>EN 374 Protective gloves against chemicals and micro-organisms EN 13832 Footwear protecting against chemicals<br>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 |

# Safety Data Sheet
## MOY Insulation Adhesive

| | | |
|---|---|---|
| | 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 |
| | Powered by AuthorITe, from Chemwatch | |

| | |
|---|---|
| Last update date (Manufacturer) | 24/01/2022 (version 3.3) |
| Moy Materials Ltd latest version prepared by | Martin Bidewell (20/11/2023 v2) |

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