


Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

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

1.1	Product Identifier		
	Product name	FleeceBond Solvent-Free Fleece Membrane Adhesive	
1.2	Relevant identified uses of the substance or mixture and uses advised against		
	Identified uses	Adhesive	
	Uses advised against	Use only for intended applications	
1.3	Details of the supplier of the safety data sheet	Moy Materials Ltd. Columbia Mills, 14/15 Sir John Rogerson's Quay, Dublin 2, D02 E409 Ireland info@moy.group	
1.4	Emergency telephone numbers		
	Emergency telephone	+44 (0) 1827 69662 (NOT 24hrs – 8am – 5pm Mon-Fri)	
	National emergency telephone number	National Poisons Information Service (UK) TEL: 0844 892 0111 (healthcare professionals only)	

SECTION 2: HAZARD IDENTIFICATION

2.1	Classification of the substance or mixture		
	Classification (SI 2019 No. 720)		
	Physical hazards	Not Classified	
	Health hazards	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	
	Environmental hazards	Not Classified	
	Human health	May cause sensitisation by inhalation. Contains non-volatile isocyanate. Heating may generate vapours which irritate the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
2.2	Label elements		
	Hazard pictograms		
			
	Signal word	Danger	
	Hazard statements	H332 Harmful if inhaled. 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.	

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

		H373 May cause damage to organs through prolonged or repeated exposure.
	Precautionary statements	<p>P260 Do not breathe vapour/ spray.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P308+P313 IF exposed or concerned: Get medical advice/ attention.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
	Supplemental label information	<p>EUH204 Contains isocyanates. May produce an allergic reaction.</p> <p>As from 24 August 2023, adequate training is required before industrial or professional use</p>
	Contains	<p>DIPHENYLMETHANE-4,4'-DI-ISOCYANATE, REACTION MASS OF 4'4 METHYLENEDIPHENYL DIISOCYANATE AND O-(P-ISOCYANATOBENZYL)PHENYL ISOCYANATE , diphenylmethane-diisocyanate, isomers and homologues, 4'4- METHYLENEDIPHENYL DIISOCYANATE, OLIGOMERS, 4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with, butane-1,3-diol, 2,4'- diisocyanatodiphenylmethane,, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer,, [(methylethylene)bis(oxy)]diprop anol and propane-1,2-diol, DIPHENYLMETHANE-2,4'-DI- ISOCYANATE, DIPHENYLMETHANE-2,2'-DI-ISOCYANATE</p>
	Supplementary precautionary statements	<p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P261 Avoid breathing vapour/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P284 [In case of inadequate ventilation] wear respiratory protection.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P312 Call a POISON CENTRE/doctor if you feel unwell.</p> <p>P314 Get medical advice/ attention if you feel unwell.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P332+P313 If skin irritation occurs: Get medical advice/ attention.</p>

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

		P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
		P337+P313 If eye irritation persists: Get medical advice/attention.
		P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.
		P362+P364 Take off contaminated clothing and wash it before reuse.
		P403+P233 Store in a well-ventilated place. Keep container tightly closed.
		P405 Store locked up.
2.3	Other hazards	

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2	Mixtures		
	DIPHENYLMETHANE-4,4'-DI-ISOCYANATE CAS number: 101-68-8 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	EC number: 202-966-0 REACH registration number: 01-2119457014-47	10-30%
	REACTION MASS OF 4'4 METHYLENEDIPHENYL DIISOCYANATE AND O-(P- ISOCYANATOBENZYL)PHENYL ISOCYANATE CAS number: — Classification Acute Tox. 2 - H330 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	EC number: 905-806-4	10-30%

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

<p>diphenylmethane-diisocyanate, isomers and homologues</p> <p>CAS number: 9016-87-9</p>		<p>5-10%</p>
<p>Classification</p>		
<p>Acute Tox. 4 - H332</p>		
<p>Skin Irrit. 2 - H315</p>		
<p>Eye Irrit. 2 - H319</p>		
<p>Resp. Sens. 1 - H334</p>		
<p>Skin Sens. 1 - H317</p>		
<p>Carc. 2 - H351</p>		
<p>STOT SE 3 - H335</p>		
<p>STOT RE 2 - H373</p>		
<p>4'4'-METHYLENEDIPHENYL DIISOCYANATE, OLIGOMERS</p> <p>CAS number: -</p>	<p>EC number: 500-040-3</p>	<p>1-5%</p>
<p>Classification</p>		
<p>Acute Tox. 4 - H332</p>		
<p>Skin Irrit. 2 - H315</p>		
<p>Eye Irrit. 2 - H319</p>		
<p>Resp. Sens. 1 - H334</p>		
<p>Skin Sens. 1 - H317</p>		
<p>Carc. 2 - H351</p>		
<p>STOT SE 3 - H335</p>		
<p>STOT RE 2 - H373</p>		
<p>4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with, butane-1,3-diol, 2,4'-diisocyanatodiphenylmethane,, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer,, [(methylethylene)bis(oxy)]diprop anol and propane-1,2-diol</p> <p>CAS number: -</p>	<p>EC number: 500-313-7</p>	<p>1-5%</p>
<p>Classification</p>		
<p>Acute Tox. 4 - H332</p>		
<p>Skin Irrit. 2 - H315</p>		
<p>Eye Irrit. 2 - H319</p>		
<p>Resp. Sens. 1 - H334</p>		
<p>Skin Sens. 1 - H317</p>		
<p>Carc. 2 - H351</p>		
<p>STOT SE 3 - H335</p>		
<p>STOT RE 2 - H373</p>		

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

	2,2'DIMORPHOLINYLDIETHYL ETHER CAS number: 6425-39-4 Classification Eye Irrit. 2 - H319	EC number: 229-194-7	<1%
	DIPHENYLMETHANE-2,4'-DI-ISOCYANATE CAS number: 5873-54-1 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	EC number: 227-534-9	<1%
	DIPHENYLMETHANE-2,2'-DI-ISOCYANATE CAS number: 2536-05-2 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	EC number: 219-799-4	<1%
	BENZOYL CHLORIDE CAS number: 98-88-4 Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Corr. 1B - H314 Skin Sens. 1 - H317	EC number: 202-710-8	<1%

Safety Data Sheet

FleeceBond Solvent-Free Fleece Membrane Adhesive

Orthophosphoric acid 85%	EC number: 231-633-2	<1%
CAS number: 7664-38-2		
Classification		
Met. Corr. 1 - H290		
Acute Tox. 4 - H302		
Skin Corr. 1B - H314		
The full text for all hazard statements is displayed in Section 16.		

SECTION 4: FIRST AID MEASURES

	Description of first aid measures	
4.1	General information	Remove affected person from source of contamination.
	Inhalation	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
	Ingestion	DO NOT induce vomiting. Get medical attention immediately.
	Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.
	Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.
4.2	Most important symptoms and effects, both acute and delayed	
	General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
	Inhalation	Irritation of nose, throat and airway. Coughing, chest tightness, feeling of chest pressure.
	Ingestion	May cause discomfort if swallowed.
	Skin contact	Prolonged skin contact may cause redness and irritation.
	Eye contact	Severe irritation, burning and tearing.
4.3	Indication of any immediate medical attention and special treatment needed	
	Notes for the doctor	No specific recommendations. If in doubt, get medical attention promptly.

SECTION 5: FIREFIGHTING MEASURES

5.1	Extinguishing media	
	Suitable extinguishing media	Extinguish with foam, carbon dioxide, dry powder or water fog.
	Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
5.2	Special hazards arising from the substance or mixture	
	Specific hazards	The product is non-combustible. Irritating gases or vapours.
	Hazardous combustion products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon.

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

		Oxides of carbon. Oxides of nitrogen.
5.3	<u>Advice for firefighters</u>	
	Protective actions during firefighting	Containers close to fire should be removed or cooled with water. Do not allow water to contact any leaked material.
	Special protective equipment for firefighters	Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1	<u>Personal precautions, protective equipment and emergency procedures</u>	
	Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet.
6.2	<u>Environmental precautions</u>	
	Environmental precautions	Do not discharge into drains or watercourses or onto the ground.
6.3	<u>Methods and material for containment and cleaning up</u>	
	Methods for cleaning up	Absorb spillage with non-combustible, absorbent material. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Provide adequate ventilation. Contain spillage with sand, earth or other suitable non-combustible material. Avoid the spillage or runoff entering drains, sewers or watercourses.
6.4	<u>Reference to other sections</u>	
	Reference to other sections	Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: HANDLING AND STORAGE

7.1	<u>Precautions for safe handling</u>	
	Usage precautions	Avoid inhalation of vapours and spray/mists. Avoid contact with skin and eyes. Do not use in confined spaces without adequate ventilation and/or respirator. Spraying is permitted only in closed systems, spray cabinets or spray boxes with adequate ventilation.
7.2	<u>Conditions for safe storage, including any incompatibilities</u>	
	Storage precautions	Store in closed original container at temperatures between 5°C and 25°C.
	Storage class	Chemical storage.
7.3	<u>Specific end use(s)</u>	
	Specific end use(s)	The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1	<u>Control parameters</u>	
------------	----------------------------------	--

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

Occupational exposure limits	
<u>DIPHENYLMETHANE-4,4'-DI-ISOCYANATE</u>	
Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m ³ (Sen)	
Short-term exposure limit (15-minute): WEL 0.07 mg/m ³ (Sen)	
<u>diphenylmethane-diisocyanate, isomers and homologues</u>	
Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m ³	
Short-term exposure limit (15-minute): WEL 0.07 mg/m ³	
4'4'-METHYLENEDIPHENYL DIISOCYANATE, OLIGOMERS	
Short-term exposure limit (15-minute): WEL 0.07 mg/m ³	
Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m ³	
DIPHENYLMETHANE-2,4'-DI- ISOCYANATE	
Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m ³ (Sen)	
Short-term exposure limit (15-minute): WEL 0.07 mg/m ³ (Sen)	
DIPHENYLMETHANE-2,2'-DI- ISOCYANATE	
Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m ³ (Sen)	
Short-term exposure limit (15-minute): WEL 0.07 mg/m ³ (Sen)	
Orthophosphoric acid 85%	
Long-term exposure limit (8-hour TWA): WEL 1 mg/m ³	
Short-term exposure limit (15-minute): WEL 2 mg/m ³	
WEL = Workplace Exposure Limit.	
Ingredient comments	WEL = Workplace Exposure Limits
<u>DIPHENYLMETHANE-4,4'-DI-ISOCYANATE</u> <u>(CAS: 101-68-8)</u>	
DNEL	Workers - Inhalation; Short term systemic effects: 0.1 mg/m ³ Workers - Dermal; Short term local effects: 28.7 mg/cm ²

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

		<p>Workers - Inhalation; Short term local effects: 0.1 mg/m³ Workers - Inhalation; Long term systemic effects: 0.05 mg/m³ Workers - Inhalation; Long term local effects: 0.05 mg/m³ Consumer - Dermal; Short term systemic effects: 25 mg/kg bw/day Workers - Dermal; Short term systemic effects: 50 mg/kg bw/day Consumer - Oral; Short term systemic effects: 20 mg/kg bw/day Consumer - Dermal; Short term local effects: 17.2 mg/cm² Consumer - Inhalation; Short term local effects: 0.05 mg/m³ Consumer - Inhalation; Long term systemic effects: 0.025 mg/m³ Consumer - Inhalation; Long term local effects: 0.025 mg/m³ Consumer - Inhalation; Short term systemic effects: 0.05 mg/m³</p>
	PNEC	<ul style="list-style-type: none"> - marine water; 0.1 mg/l - STP; 1 mg/l - Fresh water; 1 mg/l - Soil; 1 mg/kg
		<p><u>REACTION MASS OF 4'4 METHYLENEDIPHENYL DIISOCYANATE AND O-(P- ISOCYANATOBENZYL)PHENYL ISOCYANATE</u></p>
	DNEL	<p>Workers - Dermal; Short term systemic effects: 50 mg/kg bw/day Workers - Inhalation; Short term systemic effects: 0.1 mg/m³ Workers - Dermal; Short term local effects: 28.7 mg/cm² Workers - Inhalation; Short term local effects: 0.1 mg/m³ Workers - Inhalation; Long term systemic effects: 0.05 mg/m³ Workers - Inhalation; Long term local effects: 0.05 mg/m³ Consumer - Dermal; Short term systemic effects: 25 mg/kg bw/day Consumer - Inhalation; Short term systemic effects: 0.05 mg/m³ Consumer - Oral; Short term systemic effects: 20 mg/kg bw/day Consumer - Dermal; Short term local effects: 17.2 mg/cm² Consumer - Inhalation; Short term local effects: 0.05 mg/m³ Consumer - Inhalation; Long term systemic effects: 0.025 mg/m³ Consumer - Inhalation; Long term local effects: 0.025 mg/m³</p>
	PNEC	<ul style="list-style-type: none"> - Fresh water; 1 mg/l - marine water; 0.1 mg/l - Soil; 1 mg/kg - STP; 1 mg/l
		<p><u>diphenylmethane-diisocyanate, isomers and homologues (CAS: 9016-87-9)</u></p>
	Ingredient comments	WEL = Workplace Exposure Limits
	DNEL	<p>Workers - Dermal; Short term systemic effects: 50 mg/kg Workers - Inhalation; Short term systemic effects: 0.1 mg/m³ Workers - Dermal; Short term local effects: 28.7 mg/cm² Workers - Inhalation; Short term local effects: 0.1 mg/m³ Workers - Inhalation; Long term systemic effects: 0.05 mg/m³ Workers - Inhalation; Long term local effects: 0.05 mg/m³ General population - Dermal; Short term systemic effects: 25 mg/kg General population -</p>

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

		<p>Inhalation; Short term systemic effects: 0.05 mg/m³ General population - Oral; Short term systemic effects: 20 mg/kg General population - Dermal; Short term local effects: 17.2 mg/cm² General population - Inhalation; Short term local effects: 0.05 mg/m³ General population - Inhalation; Long term systemic effects: 0.025 mg/m³ General population - Inhalation; Long term local effects: 0.025 mg/m³</p>
	PNEC	<p>- Fresh water; 1 mg/l - marine water; 0.1 mg/l - Soil; 1 mg/kg dry weight - STP; 1 mg/l</p>
		<p><u>4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with, butane-1,3-diol, 2,4'- diisocyanatodiphenylmethane,, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer,, [(methylethylene)bis(oxy)]diprop anol and propane-1,2-diol</u></p>
	DNEL	<p>Workers - Inhalation; Short term systemic effects: 0.1 mg/m³ Workers - Dermal; Short term local effects: 28.7 mg/cm² Workers - Inhalation; Short term local effects: 0.1 mg/m³ Workers - Inhalation; Long term systemic effects: 0.05 mg/m³ Workers - Inhalation; Long term local effects: 0.05 mg/m³ Consumer - Dermal; Short term systemic effects: 25 mg/kg bw/day Workers - Dermal; Short term systemic effects: 50 mg/kg bw/day Consumer - Oral; Short term systemic effects: 20 mg/kg bw/day Consumer - Dermal; Short term local effects: 17.2 mg/cm² Consumer - Inhalation; Short term local effects: 0.05 mg/m³ Consumer - Inhalation; Long term systemic effects: 0.025 mg/m³ Consumer - Inhalation; Long term local effects: 0.025 mg/m³ Consumer - Inhalation; Short term systemic effects: 0.05 mg/m³</p>
	PNEC	<p>- marine water; 0.1 mg/l - STP; 1 mg/l - Fresh water; 1 mg/l - Soil; 1 mg/kg</p>
		<p><u>4'-METHYLENEDIPHENYL DIISOCYANATE, OLIGOMERS</u></p>
	DNEL	<p>Workers - Inhalation; Short term systemic effects: 0.1 mg/m³ Workers - Dermal; Short term local effects: 28.7 mg/cm² Workers - Inhalation; Short term local effects: 0.1 mg/m³ Workers - Inhalation; Long term systemic effects: 0.05 mg/m³ Workers - Inhalation; Long term local effects: 0.05 mg/m³ Consumer - Dermal; Short term systemic effects: 25 mg/kg bw/day Workers - Dermal; Short term systemic effects: 50 mg/kg bw/day Consumer - Oral; Short term systemic effects: 20 mg/kg bw/day Consumer - Dermal; Short term local effects: 17.2 mg/cm² Consumer - Inhalation; Short term local effects: 0.05 mg/m³ Consumer - Inhalation; Long term systemic effects: 0.025 mg/m³ Consumer - Inhalation; Long term local effects: 0.025 mg/m³ Consumer - Inhalation; Short term systemic effects: 0.05 mg/m³</p>

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

	PNEC	- marine water; 0.1 mg/l - STP; 1 mg/l - Fresh water; 1 mg/l - Soil; 1 mg/kg
		<u>2,2'DIMORPHOLINYLDIETHYL ETHER (CAS: 6425-39-4)</u>
	DNEL	Workers - Inhalation; Long term systemic effects: 7.28 mg/m ³ Workers - Dermal; Long term systemic effects: 1 mg/kg bw/day Consumer - Inhalation; Long term systemic effects: 1.8 mg/m ³ Consumer - Dermal; Long term systemic effects: 0.5 mg/kg bw/day Consumer - Oral; Long term systemic effects: 0.5 mg/kg bw/day
	PNEC	- Fresh water; 0.1 mg/l - marine water; 0.01 mg/l - Intermittent release; 1 mg/l - Sediment (Freshwater); 8.2 mg/kg - Sediment (Marinewater); 0.82 mg/kg - STP; 100 mg/l - Soil; 1.58 mg/kg
8.2	Exposure controls	
	Protective equipment	
	     	
	Appropriate engineering controls	Provide adequate ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients. As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist.
	Eye/face protection	Wear chemical splash goggles.
	Hand protection	It is recommended that gloves are made of the following material: Nitrile rubber. It should be noted that liquid may penetrate the gloves. Frequent changes are recommended. For exposure up to 8 hours, wear gloves made of the following material: Nitrile rubber.
	Other skin and body protection	Wear suitable protective clothing as protection against splashing or contamination. Wear apron or protective clothing in case of contact.
	Hygiene measures	Use engineering controls to reduce air contamination to permissible exposure level. Wash hands after handling. When using do not eat, drink or smoke.
	Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3. When spraying, wear a suitable supplied-air respirator.
	Environmental exposure controls	Keep container tightly sealed when not in use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

9.1	<u>Information on basic physical and chemical properties</u>	
	Appearance	Coloured liquid.
	Colour	Various colours
	Odour	Musty (mouldy).
	Odour threshold	Not available.
	pH	Estimated value. pH (concentrated solution): 7-8
	Melting point	<10°C
	Initial boiling point and range	330°C @ mbar.
	Flash point	>200°C Closed cup.
	Evaporation rate	slow.
	Evaporation factor	Not available.
	Flammability (solid, gas)	Not available.
	Upper/lower flammability or explosive limits	Estimated value.: 0.6% - 11.5%
	Other flammability	Not available.
	Vapour pressure	0.01 Pa @ °C.
	Vapour density	8.5.
	Relative density	1.12
	Bulk density	Not available.
	Solubility(ies)	Insoluble in water. Hardens in contact with water.
	Partition coefficient	Not available.
	Auto-ignition temperature	>600°C
	Decomposition Temperature	Not available.
	Viscosity	90-130 mPa s @ 25°C.
	Explosive properties	Not available.
	Explosive under the influence of a flame	Not considered to be explosive.
	Oxidising properties	Not available.
	Comments	Information given is applicable to the product as supplied.
9.2	<u>Other information</u>	
	Other information	No information required.
	Refractive index	Not available.
	Particle size	Not available.
	Molecular weight	Not available.
	Volatility	Not available.
	Saturation concentration	Not available.
	Critical temperature	Not available.
	Volatile organic compound	No information available.

SECTION 10: STABILITY AND REACTIVITY

10.1	<u>Reactivity</u>	
	Reactivity	The product will harden into a solid mass in contact with water and moisture.
10.2	<u>Chemical stability</u>	
	Stability	Stable at normal ambient temperatures and when used as recommended.

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

10.3	<u>Possibility of hazardous reactions</u>		
	Possibility of hazardous reactions	Not applicable. May polymerise.	
10.4	<u>Conditions to avoid</u>		
	Conditions to avoid	Avoid contact with water.	
10.5	<u>Incompatible materials</u>		
10.6	<u>Hazardous decomposition products</u>		
	Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon. Oxides of carbon. Oxides of nitrogen.	

SECTION 11: TOXICOLOGICAL INFORMATION

11.1	<u>Information on toxicological effects</u>		
	<u>Acute toxicity - oral</u>		
	Acute toxicity – oral (LD ₅₀ mg/kg)	10,000.0	
	Species	Rat	
	<u>Acute toxicity - dermal</u>		
	Acute toxicity dermal (LD ₅₀ mg/kg)	10,000.0	
	Species	Rabbit	
	<u>Acute toxicity - inhalation</u>		
	ATE inhalation (gases ppm)	391,304.35	
	ATE inhalation (vapours mg/l)	956.52	
	ATE inhalation (dusts/mists mg/l)	2.76	
	<u>Skin corrosion/irritation</u>		
	Animal data	Irritating.	
	<u>Serious eye damage/irritation</u>		
	Serious eye damage/irritation	Moderately irritating.	
	<u>Respiratory sensitisation</u>		
	Respiratory sensitisation	Sensitising.	
	<u>Carcinogenicity</u>		
	Carcinogenicity	Suspected carcinogen based on limited evidence.	
	Target organ for carcinogenicity	No specific target organs known.	
	<u>Reproductive toxicity</u>		
	Reproductive toxicity - development	This substance has no evidence of toxicity to reproduction.	
	<u>Specific target organ toxicity - repeated exposure</u>		
	STOT - repeated exposure	Morphological changes that are potentially reversible but provide clear evidence of marked organ dysfunction.	

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

	<u>Aspiration hazard</u>	
	Aspiration hazard	Not anticipated to present an aspiration hazard, based on chemical structure.
	Inhalation	Irritating to respiratory system. May cause sensitisation by inhalation.
	Ingestion	May cause stomach pain or vomiting.
	Skin contact	Irritating to skin. May cause sensitisation by skin contact.
	Eye contact	Irritation of eyes and mucous membranes.
	Acute and chronic health hazards	May cause sensitisation by skin contact. The product contains small quantities of isocyanate. May cause respiratory allergy. May cause respiratory system irritation. Frequent inhalation of vapours may cause respiratory allergy.
	Route of exposure	Inhalation Skin and/or eye contact.
	Medical symptoms	Irritation of eyes and mucous membranes. Coughing, chest tightness, feeling of chest pressure.
	Medical considerations	Chronic respiratory and obstructive airway diseases.
	<u>Toxicological information on ingredients.</u>	
		<u>DIPHENYLMETHANE-4,4'-DI-ISOCYANATE</u>
	<u>Acute toxicity - oral</u>	
	Acute toxicity oral (LD ₅₀ mg/kg)	10,000.0
	Species	Rat
	ATE oral (mg/kg)	10,000.0
	<u>Acute toxicity - dermal</u>	
	Acute toxicity dermal (LD ₅₀ mg/kg)	9,400.0
	Species	Rabbit
	ATE dermal (mg/kg)	9,400.0
	<u>Acute toxicity - inhalation</u>	
	Acute toxicity inhalation (LC ₅₀ dust/mist mg/l)	1.5
	Species	Rat
	ATE inhalation (dusts/mists mg/l)	1.5
	<u>Carcinogenicity</u>	
	IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
		<u>REACTION MASS OF 4'4 METHYLENEDIPHENYL DIISOCYANATE AND O-(P- ISOCYANATOBENZYL)PHENYL ISOCYANATE</u>
	<u>Acute toxicity - dermal</u>	
	Acute toxicity dermal (LD ₅₀ mg/kg)	9,400.0
	Species	Rabbit
	<u>Acute toxicity - inhalation</u>	
	Acute toxicity inhalation (LC ₅₀ dust/mist mg/l)	0.49
	Species	Rat
	ATE inhalation (dusts/mists mg/l)	0.49
		<u>diphenylmethane-diisocyanate, isomers and homologues</u>

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

<u>Acute toxicity - oral</u>		
Acute toxicity oral (LD ₅₀ mg/kg)	10,000.0	
Species	Rat	
ATE oral (mg/kg)	10,000.0	
<u>Acute toxicity - dermal</u>		
Acute toxicity dermal (LD ₅₀ mg/kg)	9,400.0	
Species	Rabbit	
ATE dermal (mg/kg)	9,400.0	
<u>Acute toxicity - inhalation</u>		
Acute toxicity inhalation (LC ₅₀ dust/mist mg/l)	1.5	
Species	Rat	
ATE inhalation (dusts/mists mg/l)	1.5	
<u>Skin corrosion/irritation</u>		
Animal data	Irritating.	
<u>Serious eye damage/irritation</u>		
Serious eye damage/irritation	Moderately irritating.	
<u>Respiratory sensitisation</u>		
Respiratory sensitisation	Sensitising.	
<u>Carcinogenicity</u>		
Carcinogenicity	Suspected carcinogen based on limited evidence.	
Target organ for carcinogenicity	No specific target organs known.	
<u>Reproductive toxicity</u>		
Reproductive toxicity - development	This substance has no evidence of toxicity to reproduction.	
<u>IARC carcinogenicity</u>		
IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.	
<u>Specific target organ toxicity - repeated exposure</u>		
STOT - repeated exposure	Morphological changes that are potentially reversible but provide clear evidence of marked organ dysfunction.	
<u>Aspiration hazard</u>		
Aspiration hazard	Not anticipated to present an aspiration hazard, based on chemical structure.	
Inhalation	Irritating to respiratory system. May cause sensitisation by inhalation.	
Ingestion	May cause stomach pain or vomiting.	
Skin contact	Irritating to skin. May cause sensitisation by skin contact.	
Eye contact	Irritation of eyes and mucous membranes.	
Acute and chronic health hazards	May cause sensitisation by skin contact. The product contains small quantities of isocyanate. May cause respiratory allergy. May cause respiratory system irritation. Frequent inhalation of vapours may cause respiratory	

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

		allergy.
Route of exposure		Inhalation Skin and/or eye contact.
Medical symptoms		Irritation of eyes and mucous membranes. Coughing, chest tightness, feeling of chest pressure.
Medical considerations		Chronic respiratory and obstructive airway diseases.
		<u>4'4-METHYLENEDIPHENYL DIISOCYANATE, OLIGOMERS</u>
<u>Acute toxicity - oral</u>		
Acute toxicity oral (LD ₅₀ mg/kg)	5,000.0	
Species	Rat	
ATE oral (mg/kg)	5,000.0	
<u>Acute toxicity - dermal</u>		
Acute toxicity dermal (LD ₅₀ mg/kg)	9,400.0	
Species	Rabbit	
ATE dermal (mg/kg)	9,400.0	
<u>Acute toxicity - inhalation</u>		
Acute toxicity inhalation (LC ₅₀ dust/mist mg/l)	1.5	
Species	Rat	
ATE inhalation (dusts/mists mg/l)	1.5	
		<u>2,2'DIMORPHOLINYLDIETHYL ETHER</u>
<u>Acute toxicity - oral</u>		
Acute toxicity oral (LD ₅₀ mg/kg)	2,035.0	
Species	Rat	
Notes (oral LD ₅₀)	No information available.	
ATE oral (mg/kg)	2,035.0	
<u>Acute toxicity - dermal</u>		
Acute toxicity dermal (LD ₅₀ mg/kg)	3,038.0	
Species	Rabbit	
Notes (dermal LD ₅₀)	No information available.	
<u>Acute toxicity - inhalation</u>		
Notes (inhalation LC ₅₀)	No information available.	
<u>Skin corrosion/irritation</u>		
Skin corrosion/irritation	No information available.	
<u>Serious eye damage/irritation</u>		
Serious eye damage/irritation	No information available.	
<u>Respiratory sensitisation</u>		
Respiratory sensitisation	No information available.	
<u>Skin sensitisation</u>		
Skin sensitisation	No information available.	
<u>Carcinogenicity</u>		
IARC carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.	
Inhalation	May be harmful if inhaled. Spray/mists may cause respiratory tract irritation.	

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

Ingestion	May be harmful if swallowed.
Skin contact	May be absorbed through the skin. May be harmful in contact with skin. May cause skin irritation.
Eye contact	May cause eye irritation.
<u>BENZOYL CHLORIDE</u>	
<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD ₅₀ mg/kg)	1,900.0
Species	Rat
ATE oral (mg/kg)	1,900.0
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD ₅₀ mg/kg)	790
Species	Rat
ATE dermal (mg/kg)	1,100.0
<u>Acute toxicity - inhalation</u>	
Acute toxicity inhalation (LC ₅₀ vapours mg/l)	1.45
Species	Rat
ATE inhalation (vapours mg/l)	11.0
<u>Carcinogenicity</u>	
IARC carcinogenicity	IARC Group 2A Probably carcinogenic to humans.
Inhalation	May be harmful if inhaled. Spray/mists may cause respiratory tract irritation.
<u>Orthophosphoric acid 85%</u>	
<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD ₅₀ mg/kg)	1,530.0
Species	Rat
ATE oral (mg/kg)	1,530.0
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD ₅₀ mg/kg)	2,740.0
Species	Rabbit
ATE dermal (mg/kg)	2,740.0

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	The product is not expected to be hazardous to the environment.
<u>Ecological information on ingredients.</u>	
	<u>diphenylmethane-diisocyanate, isomers and homologues</u>
12.1	Ecotoxicity
	The product is not expected to be hazardous to the environment.
	<u>Toxicity</u>
	<u>Acute aquatic toxicity</u>
	Acute toxicity - fish
	LC ₅₀ , 96 hours: > 1000 mg/l, Freshwater fish
	Acute toxicity - aquatic invertebrates
	EC ₅₀ , 48 hours: >500 mg/l, Daphnia magna
	Acute toxicity - aquatic plants
	EC ₅₀ , 72 hours: ~ 1640 mg/l, Scenedesmus subspicatus

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

<u>Ecological information on ingredients.</u>		
		<u>DIPHENYLMETHANE-4,4'-DI-ISOCYANATE</u>
	<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hours: >1000 mg/l, Marinewater fish	
Acute toxicity - aquatic invertebrates	EC ₅₀ , 24 hours: >1000 mg/l, Daphnia magna	
	<u>Chronic aquatic toxicity</u>	
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: >10 mg/l, Daphnia magna	
		<u>REACTION MASS OF 4'4 METHYLENEDIPHENYL DIISOCYANATE AND O-(P-ISOCYANATOBENZYL)PHENYL ISOCYANATE</u>
	<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hours: >1000 mg/l, Fish	
Acute toxicity - aquatic invertebrates	C ₅₀ , 24 hours: >1000 mg/l, Daphnia magna NOEC, 21 days: 10 mg/l, Daphnia magna	
Acute toxicity - microorganisms	EC ₅₀ , 3 hours: >100 mg/l, Activated sludge	
		<u>diphenylmethane-diisocyanate, isomers and homologues</u>
	<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hours: > 1000 mg/l, Freshwater fish	
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: >500 mg/l, Daphnia magna	
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: ~ 1640 mg/l, Scenedesmus subspicatus	
Acute toxicity - microorganisms	EC ₅₀ , 3 hours: 100 mg/l, Activated sludge	
	<u>Chronic aquatic toxicity</u>	
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 10 mg/l, Daphnia magna	
		<u>4'4-METHYLENEDIPHENYL DIISOCYANATE, OLIGOMERS</u>
	<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hours: 1000 mg/l, Fish	
Acute toxicity - aquatic invertebrates	EC ₅₀ , 24 hours: 1000 mg/l, Daphnia magna	
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 1640 mg/l, Algae	
Acute toxicity - microorganisms	EC ₅₀ , 3 hours: 100 mg/l, Bacteria	
	<u>Chronic aquatic toxicity</u>	
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 10 mg/l, Daphnia magna	
		<u>4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with, butane-1,3-diol, 2,4'- diisocyanatodiphenylmethane,, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer,, [(methylethylene)bis(oxy)]diprop anol and propane-1,2-diol</u>
	<u>Acute aquatic toxicity</u>	

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

	Acute toxicity - fish	LC ₅₀ , 96 hours: >1000 mg/l, Fish	
	Acute toxicity - aquatic invertebrates	EC ₅₀ , 24 hours: >1000 mg/l, Daphnia magna	
	Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: >1640 mg/l, Algae	
	Acute toxicity - microorganisms	EC ₅₀ , 3 hours: >100 mg/l, Activated sludge	
	<u>Chronic aquatic toxicity</u>		
	Chronic toxicity - aquatic invertebrates	NOEC, 21 days: >10 mg/l, Daphnia magna	
	<u>2,2'DIMORPHOLINYLDIETHYL ETHER</u>		
	<u>Acute aquatic toxicity</u>		
	Acute toxicity - fish	LC ₅₀ , 96 hours: 2150 mg/l,	
	Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: >100 mg/l, Daphnia magna	
	Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: > 100 mg/l, Pseudokirchneriella subcapitata	
	Acute toxicity - microorganisms	EC ₅₀ , 3 hours: >1000 mg/l, Bacteria	
	<u>BENZOYL CHLORIDE</u>		
	<u>Acute aquatic toxicity</u>		
	Acute toxicity - fish	LC ₅₀ , 96 hours: 8.7 mg/l, Fish	
	Acute toxicity - aquatic invertebrates	Not available.	
	Acute toxicity - aquatic plants	Not available.	
	Acute toxicity - microorganisms	Not available.	
	Acute toxicity - terrestrial	Not available.	
	<u>Orthophosphoric acid 85%</u>		
	<u>Acute aquatic toxicity</u>		
	Acute toxicity - fish	No information available.	
	Acute toxicity - aquatic invertebrates	Not available.	
	Acute toxicity - aquatic plants	Not available.	
	Acute toxicity - microorganisms	Not available.	
	Acute toxicity - terrestrial	Not available.	
12.2	<u>Persistence and degradability</u>		
	Persistence and degradability	The product is not readily biodegradable.	
	Stability (hydrolysis)	Reacts with water.	
	Biological oxygen demand	< 10 g O ₂ /g substance	
12.3	<u>Bioaccumulative potential</u>		
	Bioaccumulative potential	The product does not contain any substances expected to be bioaccumulating.	
	Partition coefficient	Not available.	
	<u>Ecological information on ingredients</u>		
	<u>DIPHENYLMETHANE-4,4'-DI-ISOCYANATE</u>		
	Partition coefficient	log Pow: 4.51	

Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

		<u>REACTION MASS OF 4'4 METHYLENEDIPHENYL DIISOCYANATE AND O-(P-ISOCYANATOBENZYL)PHENYL ISOCYANATE</u>
	Bioaccumulative potential	log Pow: 4.51, BCF: 200,
		<u>diphenylmethane-diisocyanate, isomers and homologues</u>
	Bioaccumulative potential	The product does not contain any substances expected to be bioaccumulating
	Partition coefficient	Not available.
		<u>4'4-METHYLENEDIPHENYL DIISOCYANATE, OLIGOMERS</u>
	Bioaccumulative potential	BCF: 200,
	Partition coefficient	log Pow: 856
		4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with, butane-1,3-diol, 2,4'- diisocyanatodiphenylmethane,, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer,, [(methylethylene)bis(oxy)]diprop anol and propane-1,2-diol
	Bioaccumulative potential	BCF: 200,
	Partition coefficient	log Pow: 6.17
12.4	<u>Mobility in soil</u>	
	Mobility	The product is non-volatile.
	<u>Ecological information on ingredients</u>	
		<u>diphenylmethane-diisocyanate, isomers and homologues</u>
	Mobility	The product is non-volatile.
12.5	<u>Results of PBT and vPvB assessment</u>	
	Results of PBT and vPvB assessment	This product does not contain any substances classified as PBT or vPvB.
	<u>Ecological information on ingredients</u>	
		<u>diphenylmethane-diisocyanate, isomers and homologues</u>
	Results of PBT and vPvB assessment	This product does not contain any substances classified as PBT or vPvB.
12.6	<u>Other adverse effects</u>	

SECTION 13: DISPOSAL CONSIDERATIONS

13.1	<u>Waste treatment methods</u>	
	General information	Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Safety Data Sheet

FleeceBond Solvent-Free Fleece Membrane Adhesive

Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
-------------------------	---

SECTION 14: TRANSPORT INFORMATION

	General	Wear protective clothing as described in Section 8 of this safety data sheet.
14.1	UN number Not applicable.	
14.2	UN proper shipping name Not applicable.	
14.3	Transport hazard class(es) No transport warning sign required. Transport labels No transport warning sign required.	
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	Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture	
	National regulations	Health and Safety at Work etc. Act 1974 (as amended).
	Restrictions (SI 2020 No. 1577 Annex XVII)	As from 24 August 2023 adequate training is required before industrial or professional use Entry number: 74
15.2	Chemical safety assessment	No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

	Issued by	Compliance
	Revision date	25/10/2022
	Revision	22



Safety Data Sheet FleeceBond Solvent-Free Fleece Membrane Adhesive

Supersedes date	12/10/2021	
Hazard statements in full	H290 May be corrosive to metals.	
	H302 Harmful if swallowed.	
	H312 Harmful in contact with skin.	
	H314 Causes severe skin burns and eye damage.	
	H315 Causes skin irritation.	
	H317 May cause an allergic skin reaction.	
	H319 Causes serious eye irritation.	
	H330 Fatal if inhaled	
	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 through prolonged or repeated exposure.	
Store Between	Store Between 5°C-25°C	
Last update date (Manufacturer)	25/10/2022 (Rev 22)	
Moy Materials Ltd version prepared by	Martin Bidewell (28/02/2023 v1)	

The data contained in this document is correct on date of issue and complete to the best of our knowledge as it applies to this product. However, it does not constitute a guarantee for any specific product features and does not establish a legally valid contractual relationship. The information given does not represent an assurance and it is the user's responsibility to ensure that the information is suitable and complete for the respective use.