

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF MATERIAL AND SUPPLIER

SUPPLIER:	PLANET PAINTS PTY LTD.
ABN:	64 109 223 298
ADDRESS:	7 Allen Court, Torrington, QLD 4350, Australia.
TELEPHONE:	(07) 4633 3544.
AH EMERGENCY TELEPHONE:	13 1126 (24 Hours) – Australian National Poisons Centre.
FAX:	(07) 4633 3466.
WEB PAGE:	www.planetpaints.com.au.
Product Name:	Maintain Part B.
Proper Shipping Name:	Not applicable.
Product Use:	Hardener for mixing with Maintain Part A and application onto concrete surfaces.
Manufacturer’s Product Code:	Not applicable.
Creation Date:	8 August 2016.
Revision Date:	Before 7 August 2021.

SECTION 2 – HAZARDS IDENTIFICATION

This product is classified as a **HAZARDOUS CHEMICAL** in accordance with the WHS, and as **NON-DANGEROUS GOODS** according to the ADG Code.

CLASSIFICATION:		
Hazard Classes & Categories:	Hazard Classes	Hazard Category
Physical:	Not applicable.	
Health:	Acute Toxicity - Inhalation.	2
	Skin Corrosion/Irritation.	2
	Serious Eye Damage/Irritation.	2A
	Sensitisation - Respiratory.	1
	Sensitisation - Skin.	1
	Carcinogenicity.	2
	Specific Target Organ Toxicity (Single Exposure).	3
Environmental:	Specific Target Organ Toxicity (Repeated Exposure).	1
	Not applicable.	
LABEL ELEMENTS:		
Signal Word:	DANGER.	
Hazard Statements:	Fatal if inhaled.	
	Causes skin irritation.	
	Causes serious eye irritation.	
	May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
	May cause an allergic skin reaction.	
	Suspected of causing cancer.	
	May cause respiratory irritation.	
	Causes damage to organs through prolonged or repeated exposure.	

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SECTION 2 – HAZARDS IDENTIFICATION (CONTINUED)

Precautionary Statements:

Prevention:

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe mist/vapours/spray.
 Wash skin thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Use personal protective equipment as required.
 Wear respiratory protection.

Response:

IF ON SKIN: Wash with plenty of soap and water.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or doctor/physician.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF exposed or concerned: Get medical advice/attention.
 Call a POISON CENTRE or doctor/physician if you feel unwell.
 If skin irritation or rash occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.

Storage:

Take off contaminated clothing and wash before reuse.
 Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.

Disposal:

Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

General:

If medical advice is needed, have product container or label at hand.
 Keep out of reach of children.
 Read label before use.

Pictogram Description:



Pictogram Description:

Skull and crossbones

Exclamation mark

Health hazard

Other Hazards which do not result in Classification:

Not applicable.

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SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Proportion:
Polymeric MDI (Polymeric diphenyl methylene diisocyanate)	9016-87-9	> 60% w/w
Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI).	101-68-8	30 - < 60% w/w
MDI Mixed Isomers.	26447-40-5	< 5% w/w
Total		100 % w/w

SECTION 4 – FIRST AID MEASURES

Scheduled Poisons:	Poisons Information Centre in each Australian State capital city can provide additional assistance for scheduled poisons. (Phone Australia 13 1126) or a doctor (at once).
First Aid Facilities Required:	Eye wash fountains and a general washing facility should be easily accessible in the immediate work area.
Inhalation:	Remove victim from exposure- avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if necessary.
Skin Contact:	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If swelling, redness, blistering or irritation occurs seek medical assistance.
Eye Contact:	Remove victim immediately from source of exposure. Make sure to remove any contact lenses from the eyes before rinsing. If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
Ingestion (Swallowed):	Immediately rinse out mouth and drink 1 or 2 glasses of water. Immediately seek medical attention and bring these instructions. If swallowed DO NOT induce vomiting. Never give anything by mouth to an unconscious patient. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration into the lungs.
PPE for First Aiders:	Wear overalls, safety glasses or goggles and impervious gloves. No special precautions are envisaged to be required. Barrier cream applied before work may make it easier to clean the skin after exposure, but does not prevent absorption through the skin. Always wash hands before smoking, eating, drinking or using the toilet.
Advice to Doctor:	The manifestations of respiratory symptoms, including pulmonary oedema, resulting from acute exposure may be delayed. No specific antidote is known. Supportive care. Treatment based on judgement by the doctor in response to reactions of the patient. Poisons Information Centre in each Australian State capital city can provide additional assistance for scheduled poisons.

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SECTION 4 – FIRST AID MEASURES (CONTINUED)

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.

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SECTION 5 – FIRE FIGHTING MEASURES

Suitable Extinguishing Media:	Foam, Dry chemical powder, BCF (where regulations permit), Carbon dioxide, Water spray or fog - Large fires only.
Unsuitable Extinguishing Media:	High pressure water jet. 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 and Carbon Dioxide (CO ₂) gas which presents additional hazard when fire fighting in a confined space. Cooling with flooding quantities of water reduces this risk.
Specific Hazards arising from the chemical:	Moderate fire hazard when exposed to heat or flame. When heated to high temperatures decomposes rapidly generating vapour which pressurises and may then rupture containers with release of flammable and highly toxic isocyanate vapour. Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.
Special Protective Equipment & Precautions for Fire Fighters:	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. Use water delivered as a fine spray to control fire and cool adjacent area. Avoid spraying water onto liquid pools. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Flooding quantities of water only. Water spray or fog may cause frothing and should be used in large quantities.
Hazchem Code:	Not applicable.
IERG:	Not applicable.
Flash Point:	> 200°C.
Flammability:	Combustible liquid. In general fire, upon combustion, this product burns with acrid black smoke and poisonous fumes and may emit Carbon monoxide (CO), Carbon dioxide (CO ₂), Nitrogen oxides (NO _x), Hydrogen Cyanide, Isocyanate, Isocyanic Acid, and other possibly toxic gases and vapours.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills:	
Personal Precautions, Protective Equipment & Emergency Procedures:	<p>In case of spill, isolate hazard area and deny entry. Wear protective clothing as described in Section 8 of this safety data sheet. Eye contact MUST be prevented by means of suitable personal protection equipment. Product is a respiratory and skin sensitiser. See Section 8, Exposure Controls And Personal Protection for further information regarding personal protection. See Section 4, First Aid Measures, for further information.</p> <p><u>Eye and face protection:</u> The use of face shields, chemical goggles, or safety glasses with side shield protection (meeting the requirements of AS/NZS 1337) is recommended. If exposed to dust or fume, wear dust-tight goggles (meeting the requirements of AS/NZS 1337).</p>

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SECTION 6 – ACCIDENTAL RELEASE MEASURES (CONTINUED)

Skin protection:

Hand protection: Chemical resistant gloves (e.g. PE/EVAL/PE gloves >1 mm thickness, complying with AS 2161) should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. Product is a respiratory and skin sensitiser. Barrier cream applied before work may make it easier to clean the skin after exposure, but does not prevent absorption through the skin.

Clothing: Suitable protective clothing complying with AS 4501, suitable chemical resistant footwear complying with AS/NZS 2210 is recommended.

Respiratory protective equipment: When the product is spilled in case of inadequate ventilation use a full face air purifying respirator (with Class A filter for organic vapours boiling above 65°C) meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Product is a respiratory and skin sensitiser.

Environmental Precautions:

Do not allow to enter drainage system, surface or ground water. In the event of product entering waters or drainage system, or polluting soil or plants contact the Environmental Protection Authority or your local Waste Management Authority.

Methods & Materials for

Containment & Cleaning up:

Small Spills:

Shut off all possible sources of ignition. Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal. The wasted material can be disposed of by incineration (preferably high temperature) by an approved agent according to State, Territory and/or Local government regulations. Transport to well-ventilated area (outside) and treat with neutralising solution consisting of a mixture of 90 % water, 2–7 % detergent and 3-8 % concentrated ammonium hydroxide. Add about 10 parts of the neutralising solution per part of isocyanate with mixing. Allow to stand for 48 hours letting any evolved carbon dioxide escape.

Large Spills:

Shut off all possible sources of ignition. Clear area of all unprotected personnel. Prevent further leakage or spillage if safe to do so. May be slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material, but not sawdust). Collect and seal in properly labelled containers or drums for disposal. If contamination of sewers or waterways has occurred advise local emergency services. The wasted material can be disposed of by incineration (preferably high temperature) by an approved agent according to State, Territory and/or Local government regulations.

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SECTION 7 – HANDLING AND STORAGE

<p>Precautions for Safe Handling:</p>	<p>Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked. Avoid smoking, naked lights or ignition sources. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions. DO NOT allow clothing wet with material to stay in contact with skin.</p>
<p>Information about Fire and Explosion Protection:</p>	<p>Combustible liquid. Refer to State Regulations for storage and transport requirements.</p>
<p>Conditions for Safe Storage, including any Incompatibilities:</p>	<p>Avoid reaction with water, alcohols and detergent solutions. Isocyanates and thioisocyanates are incompatible with many classes of compounds, reacting exothermically to release toxic gases. Reactions with amines, strong bases, aldehydes, alcohols, alkali metals, ketones, mercaptans, strong oxidisers, hydrides, phenols, and peroxides can cause vigorous releases of heat. Acids and bases initiate polymerisation reactions in these materials. Isocyanates easily form adducts with carbodiimides, isothiocyanates, ketenes, or with substrates containing activated CC or CN bonds. Some isocyanates react with water to form amines and liberate carbon dioxide. This reaction may also generate large volumes of foam and heat. Foaming in confined spaces may produce pressure in confined spaces or containers. Gas generation may pressurise drums to the point of rupture. Do NOT reseal container if contamination is expected. Open all containers with care. Base-catalysed reactions of isocyanates with alcohols should be carried out in inert solvents. Such reactions in the absence of solvents often occur with explosive violence. Isocyanates will attack and embrittle some plastics and rubbers. Avoid cross contamination between the two liquid parts of product (kit). If two part products are mixed or allowed to mix in proportions other than manufacturer's recommendation, polymerisation with gelation and evolution of heat (exotherm) may occur. This excess heat may generate toxic vapour. Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous. Material reacts with water and generates Carbon dioxide (CO₂) gas, pressurises containers with even drum rupture resulting. DO NOT reseal container if contamination is suspected. Open all containers with care. Store in a cool (at temperatures below 25°C), dry, well-ventilated place and out of direct sunlight. Keep containers closed when not in use - check regularly for leaks.</p>
<p>Suitable Materials for Receptacles & Pipes:</p> <p>Unsuitable Materials for Receptacles:</p>	<p>Metal can or drum. Packaging as recommended by manufacturer. Check all containers are clearly labelled and free from leaks</p> <p>Plastics; Natural, neoprene or nitrile rubbers.</p>

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SECTION 7 – HANDLING AND STORAGE (CONTINUED)

Further Information about Storage Conditions:	<p>Store indoors at 15 to 25°C in original, unopened containers. Protect from atmospheric moisture. Replace outage with inert Dry Nitrogen Gas. Avoid product temperatures above 50°C and below 5°C. At temperatures below 5°C crystallisation may occur. Crystallised product can be melted by heating overnight to 60-70°C. Store away from oxidising agents, acids, alkali, amines, direct sunlight or any source of ignition or heat. This material is NON-DANGEROUS GOODS according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) and must be stored in accordance with the relevant regulations.</p> <p>This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.</p> <p>Containers may be hazardous when empty. Since emptied containers retain product residue, follow all SDS and label warnings even after container is emptied.</p>
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SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Control Measures: Exposure Standards:	<p>Ensure the use of individual protection measures Including Personal Protective Equipment (PPE) and that the appropriate biological monitoring is carried out.</p> <p>National Occupational Exposure Limits, as published by Safework Australia:</p> <p>Time-weighted Average (TWA): None established for product.</p> <p>TWA for Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI) is 0.02 mg/m³ (Category 2 carcinogen – Suspected human carcinogen) (Sensitiser).</p> <p>TWA for Polymeric MDI (Polymeric diphenyl methylene diisocyanate) (as-NCO) is 0.02 mg/m³ (Sensitiser).</p> <p>TWA for MDI Mixed Isomers (as-NCO) is 0.02 mg/m³ (Sensitiser).</p> <p>Short Term Exposure Limit (STEL): None established for product.</p> <p>STEL for Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI) is 0.07 mg/m³ (Category 2 carcinogen – Suspected human carcinogen) (Sensitiser).</p> <p>STEL for Polymeric MDI (Polymeric diphenyl methylene diisocyanate) (as-NCO) is 0.07 mg/m³ (Sensitiser).</p> <p>STEL for MDI Mixed Isomers (as-NCO) is 0.07 mg/m³ (Sensitiser).</p> <p>These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.</p>
Biological Monitoring:	<p>Safe Work Australia have not published any Biological Limits for ingredients of this product.</p>
Engineering Controls:	<p>When using this product use only outdoors or in a well-ventilated area and ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use with local exhaust ventilation (draw off vapours directly at the point of generation and exhaust from the work area) or while wearing appropriate respirator. Vapour is heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use. Provide eyewash station and safety shower.</p>

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SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION (CONTINUED)

Individual Protection Measures Including Personal Protective Equipment (PPE):

General protective & hygiene measures: The usual precautionary measures are to be adhered to when handling chemicals. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing, and wash contaminated clothing and other protective equipment before storing or re-using. DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking and using the toilet. Product is a respiratory and skin sensitiser. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke. Avoid contact with the eyes and skin. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye and face protection: The use of face shields, chemical goggles, or safety glasses with side shield protection (meeting the requirements of AS/NZS 1337) is recommended. If exposed to dust or fume, wear dust-tight goggles (meeting the requirements of AS/NZS 1337).

Skin protection:

Hand protection: Chemical resistant gloves (e.g. PE/EVAL/PE gloves >1 mm thickness, complying with AS 2161) should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. Product is a skin sensitiser. Barrier cream applied before work may make it easier to clean the skin after exposure, but does not prevent absorption through the skin.

Clothing: Suitable protective clothing complying with AS 4501, suitable chemical resistant footwear complying with AS/NZS 2210 is recommended.

Respiratory protective equipment: When the product is used in case of inadequate ventilation use a full face air purifying respirator (with Class A filter for organic vapours boiling above 65°C) meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

Note: Warning properties (irritation of the eyes, nose and throat, or odour) are not adequate to prevent overexposure from inhalation. Product is a respiratory sensitiser. This material can produce asthmatic sensitisation upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapour or spray mist.

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SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical Description/ Properties:

Appearance:	Dark brown viscous liquid.
Odour:	Low odour.
Odour Threshold:	Not available.
pH:	Not applicable.
Melting Point/ Freezing Point:	< 0°C.
Initial Boiling Point/ Boiling Range:	IBP: Ca 180°C, FBP: Ca 200°C @ 0.67 kPa.
Flashpoint:	> 200°C.
Evaporation Rate:	Very slow.
Flammability (solid, gas):	Not applicable.
Upper/Lower Flammability or Explosive Limits:	Not available.
Vapour Pressure:	< 0013 Pa @ 20°C.
Vapour Density:	>1 (air=1).
Relative Density:	1.23 @ 25°C.
Solubility in water:	Immiscible, reacts slowly to liberate Carbon Dioxide (CO ₂) gas.
Solubility in solvents:	Miscible with organic solvents including esters, ketones, and aromatic hydrocarbons.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	> 180°C.
Viscosity:	Ca 200 mPa s @ 25°C.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity:	Exothermic reaction with amines and alcohols. Product reacts slowly with water forming Carbon dioxide (CO ₂). In closed containers risk of bursting owing to increase of pressure.
Chemical Stability:	Stable at normal temperatures and pressure, but product reacts Product reacts slowly with water forming Carbon dioxide (CO ₂). Exothermic reaction with amines and alcohols.
Possibility of Hazardous Reactions:	Contact with moisture, other materials that react with isocyanates, or temperatures above 177°C, may cause polymerisation.
Conditions to Avoid:	Prolonged heating over 45°C. Stable when stored under normal conditions. Thermal decomposition begins at temperatures above 180°C.
Incompatible Materials:	Water, acid, bases, alcohols, and metal compounds. Avoid water as it reacts to form heat and carbon dioxide. Enough heat and pressure can be produced to rupture a closed container. The reaction with water is slow at temperatures less than 49°C, but accelerated at higher temperature and in the presence of the above mentioned materials. Some reactions are violent.

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SECTION 11 – TOXICOLOGICAL INFORMATION

Health Effects:	No data for product, following data is compiled on basis of ingredients.
Acute Toxicity Data (Oral):	Product is not classified as Acute Toxicity Data (Oral). On basis of ingredients: Acute Toxicity for Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI), (Oral) LD ₅₀ (rat) 9,200 mg/kg. Acute Toxicity for Polymeric MDI (Polymeric diphenyl methylene diisocyanate), (Oral) LD ₅₀ (rat) > 49,000 mg/kg.
Acute Toxicity Data (Dermal):	Product is not classified as Acute Toxicity Data (Dermal). No data for product. On basis of ingredients: Acute Toxicity for Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI), (Dermal) LD ₅₀ (rabbit) > 6,200 mg/kg. Acute Toxicity for Polymeric MDI (Polymeric diphenyl methylene diisocyanate), (Dermal) LD ₅₀ (rabbit) > 9,400 mg/kg.
Acute Toxicity Data (Inhalation):	Product is classified as Acute Toxicity Data (Inhalation); Hazard Category 2 Fatal if inhaled. On basis of ingredients: Acute Toxicity for Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI), (Inhalation) LC ₅₀ (rat) 178 mg/m ³ . Acute Toxicity for Polymeric MDI (Polymeric diphenyl methylene diisocyanate), (Inhalation) LC ₅₀ (rat) 490 mg/m ³ /4 hours.
Chronic Toxicity Data:	No data for product. On basis of ingredients: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI / Polymeric, MDI aerosols.
Skin Corrosion/Irritation:	Product is classified as Skin Corrosion/Irritation, Hazard Category 2; Causes skin irritation. On basis of ingredients: Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI), Skin irritant (rabbit): 500 mg/24 hours.
Serious Eye Damage/Irritation:	Product is not classified as Serious Eye Damage/Irritation. On basis of ingredients: Polymeric MDI (Polymeric diphenyl methylene diisocyanate), Eye irritant (rabbit): 100 mg.
Respiratory or Skin Sensitisation:	Product is classified as a Respiratory Sensitiser Hazard Category 1; May cause allergy or asthma symptoms or breathing difficulties if inhaled and is classified as a Skin Sensitiser, Hazard Category 1; May cause an allergic skin reaction. On basis of ingredients: 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. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested. Asthma-like symptoms may continue for months or even years after exposure to the material ceases.

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SECTION 11 – TOXICOLOGICAL INFORMATION (CONTINUED)

Respiratory or Skin Sensitisation (continued):

This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

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. Allergy causing activity is due to interactions with proteins.

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 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. This group of compounds has therefore been classified as cancer-causing.

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.

Germ Cell Mutagenicity:

Product is not classified as a Germ Cell Mutagen. No data for product. On basis of ingredients: Mutagenicity data on MDI are inconclusive. MDI was weakly positive in some in-vitro (test tube) studies; other in-vitro studies were negative. A mutagenicity study in animals was negative.

Carcinogenicity:

Product is classified as a Carcinogen, Hazard Category 2; Suspected of causing cancer. On basis of ingredients:

Lung tumours have been observed in laboratory animals exposed to aerosol droplets of MDI / Polymeric MDI at 6 mg/m³ for their lifetime. Tumours occurred concurrently with respiratory irritation and lung injury. Only irritation was noted at the lower concentrations of 0.2 and 0.1 mg/m³. Current exposure standards are expected to protect against these effects.

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SECTION 11 – TOXICOLOGICAL INFORMATION (CONTINUED)

Reproductive Toxicity:	Product is not classified as Toxic to Reproduction. On basis of ingredients: In laboratory animals, Polymeric MDI did not produce birth defects; other foetal effects occurred only at high doses, which were toxic to the mother.
Specific Target Organ Toxicity (STOT) – Single Exposure:	Product is classified as Specific Target Organ Toxicity (Single Exposure), Hazard Category 3; May cause respiratory irritation.
Specific Target Organ Toxicity (STOT) – Repeated Exposure:	Product is classified as Specific Target Organ Toxicity (Repeated Exposure), Hazard Category 1; Causes damage to organs through prolonged or repeated exposure.
Aspiration Hazard: Information on Possible Routes of Exposure:	Product is not classified as Aspiration Hazard. No data for product.
Ingestion (Swallowing):	Inhalation is the primary route of exposure although absorption may occur through skin contact or following accidental ingestion. Scheduled poison, not to be ingested. Ingestion of this product causes vomiting, nausea and abdominal pain. Single dose oral toxicity is considered to be low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.
Eye Contact:	May cause slight eye irritation. Corneal injury is unlikely.
Skin Contact:	Prolonged or repeated exposure may cause skin irritation. May stain the skin. Skin contact may result in allergic skin reactions or respiratory sensitisation but is not expected to result in absorption of amounts sufficient to cause other adverse effects.
Inhalation:	Intentional exposure to vapours may cause respiratory irritation. Diisocyanate or polyisocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a pre-existing, nonspecific bronchial hyper-reactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible. Inhalation of the solvents may cause central nervous system depression with symptoms of nausea, lightheadedness, drowsiness, dizziness and loss of co-ordination.

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SECTION 11 – TOXICOLOGICAL INFORMATION (CONTINUED)

Repeated Dose Toxicity:	No data for product. On basis of ingredients: As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitisation to diisocyanates or polyisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates or polyisocyanates at levels well below the exposure limits or guidelines. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling solvents may be harmful or fatal.
Other Health Effects:	Industrial experience has shown no evidence of carcinogenicity of MDI in humans. An animal study indicates that MDI may induce respiratory hypersensitivity following dermal exposure.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity:	This product is not classified as Hazardous to the aquatic environment and is not classified as Environmentally hazardous substance (according to the ADG Code).
Fish Toxicity:	No data for product. On basis of ingredients: Acute Toxicity for Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI), LC ₅₀ ≥ 1,000 mg/L (Zebra fish, Danio rerio, static test, 96 hours). Tests carried out on a comparable product.
Invertebrates Toxicity:	No data for product. On basis of ingredients: Acute Toxicity for Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI), EC ₅₀ ≥ 1,000 mg/L (Water flea, Daphnia magna, 24 hours). Tests carried out on a comparable product.
Algae Toxicity:	No data for product. On basis of ingredients: Acute Toxicity for Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI), NOEC 1,640 mg/L (Freshwater Algae, Desmodesmus Subspicatus, 72 hours). Tests carried out on a comparable product.
Toxicity to Microorganisms:	No data for product. On basis of ingredients: Acute Toxicity for Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI), EC ₅₀ activated sludge, respiration inhibition > 100 mg/L/3h. Tests carried out on a comparable product.
Effects on other organisms:	No data for product.
Persistence and Degradability:	No data for product. On basis of ingredients: Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI) is expected to have low persistence in soil (Half-life = 1 day) and have low persistence in water (Half- life = 0.24 days).

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SECTION 12 – ECOLOGICAL INFORMATION (CONTINUED)

Biological Oxygen Demand (BOD):	No data for product. On basis of ingredients: Hexamethylene diisocyanate, has BOD of 42 % after 28 days (bacteria). 1-Methoxy-2-propanol Acetate has BOD of 19% after 5 days, BOD of 57% after 10 days, BOD of 61.5% after 20 days.
Theoretical Oxygen Demand (ThOD):	No data for product.
Chemical Oxygen Demand (COD):	No data for product.
BOD/COD Ratio:	None available for product.
Bio-accumulative potential:	There is no evidence to suggest bioaccumulation will occur. On basis of ingredients: Bioconcentration potential of Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI), is low (BCF 15, fish).
Mobility in Soil:	No data for product. Accidental spillage may lead to penetration in the soil and groundwater. However, there is no evidence that this would cause adverse ecological effects. Product is heavier than and is insoluble in water. On basis of ingredients: Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI) is expected to be relatively immobile in soil (Log K_{oc} 376,200).
General:	DO NOT DISCHARGE INTO DRAINS, WATERWAYS, SEWER OR ENVIRONMENT. Product may be hazardous for water. Product is heavier than and is insoluble in water. On basis of ingredients: Diphenylmethane-4,4'-di-isocyanate (4,4'-MDI) is expected to react at the interface forming Carbon dioxide (CO ₂) and a solid insoluble product with high melting point (polyurethane). Previous experience shows that polyurethane is inert and non-degradable. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Inform local authorities if this occurs.



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SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal methods:

Product:

Liquids are usually incinerated in an approved facility. Solids are usually also incinerated or land filled in approved facilities. Empty steel drums should first be decontaminated by filling with water or decontamination solution. Let drums stand **unsealed** for at least 48 hours. Before disposal drums should be drained, triple rinsed with water, and holed or crushed to prevent reuse. The other option is to offer the undamaged, empty and decontaminated containers to a qualified reconditioner or recycler. A suggested method for disposal of drain and rinse liquids is by treatment in an approved wastewater treatment system. Suggested methods for disposal of plastic containers are either disposal in an approved landfill after shredding or incineration in an approved industrial incinerator or other appropriate incinerator facility. Steel drums are commonly crushed for disposal and sent to an approved landfill. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterisation and disposal compliance are the responsibility solely of the party generating the waste or deciding to discard or dispose of the material. None of these waste management options should be considered “arranging for disposal”.

Individual Protection Measures:

Refer to Individual Protection Measures Including Personal Protective Equipment (PPE) in Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Uncleaned Packaging:

Recommended to be disposed of according to official regulations.

Behaviour in Sewage

No further relevant information available.

Processing Plants:

SECTION 14 – TRANSPORT INFORMATION

Road and Rail Transport:

This product is classified as **NON-DANGEROUS GOODS**, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).

UN Number:

Not applicable.

UN Proper Shipping

Not applicable.

Name or Technical

Name:

ADG Class:

Not applicable.

Packing Group:

Not applicable.

HAZCHEM Code:

Not applicable.

IERG:

Not applicable.

Segregation:

Not applicable.

SAFETY DATA SHEET

SECTION 15 – REGULATORY INFORMATION

Australian Standards:	<p>AS/NZS 1337.1:2010: Personal eye protection - Eye and face protectors for occupational applications.</p> <p>AS/NZS 1715:2009: Selection, use and maintenance of respiratory protective equipment.</p> <p>AS/NZS 1716:2012: Respiratory protective devices.</p> <p>AS 1940:2004: The storage and handling of flammable and combustible liquids.</p> <p>AS/NZS 2161.1:2000: Occupational protective gloves: Selection, use and maintenance.</p> <p>AS/NZS 2161.2:2005: Occupational protective gloves: General requirements.</p> <p>AS/NZS 2161.10.1:2005: Occupational protective gloves: Protective gloves against chemicals and micro-organisms —Terminology and performance requirements.</p> <p>AS/NZS 2161.10.2:2005: Occupational protective gloves: Protective gloves against chemicals and micro-organisms—Determination of resistance to penetration.</p> <p>AS/NZS 2161.10.3:2005: Occupational protective gloves: Protective gloves against chemicals and micro-organisms—Determination of resistance to permeation by chemicals.</p> <p>AS/NZS 2210.1:2010: Safety, protective and occupational footwear - Guide to selection, care and use.</p> <p>AS/NZS 2210.2:2009: Occupational protective footwear - Test methods (ISO 20344:2004, MOD).</p> <p>AS/NZS 2210.4:2009: Occupational protective footwear - Specification for protective footwear (ISO 20346:2004, MOD).</p> <p>AS/NZS 4501.1:2008: Occupational protective clothing - Guidelines on the selection, use, care and maintenance of protective clothing.</p> <p>AS/NZS 4501.2:2006: Occupational protective clothing - General requirements.</p>
NICNAS:	All ingredients present on AICS.
SUSMP:	Poisons Schedule S6 allocated.

SECTION 16 – OTHER INFORMATION

Acronyms and Comments:

ACGIH:	American Conference of Industrial Hygienists.
ADG Code:	Australian Code for the Transport of Dangerous Goods by Road and Rail.
AICS:	Australian Inventory of Chemical Substances.
AS:	Standards issued by Standards Australia, GPO Box 476, Sydney NSW 2001, Australia.
AS/NZ:	Standards issued by Standards Australia, GPO Box 476, Sydney NSW 2001, Australia and Standards New Zealand, Private Bag 2439 Wellington 6140, New Zealand.
BEI:	Biological Exposure Indices published by the Conference of Governmental Industrial Hygienists (ACGIH), 1330 Kemper Meadow Drive, Cincinnati, OH 45240-4148, USA.
CAS Number:	Chemical Abstracts Service Registry Number.
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals, a globally harmonized system for classification and labelling of chemicals proposed by the United Nations.
HAZCHEM:	An emergency action code of numbers and letters which gives information to emergency services.
IARC:	International Agency for Research on Cancer.
IERG:	Dangerous Goods Initial Emergency Response Guide (SAA/SNZ HB 76:2010 Standards Australia/Standards New Zealand).
IMDG:	International Maritime Dangerous Goods Code for transport by sea.

SAFETY DATA SHEET

SECTION 16 – OTHER INFORMATION (CONTINUED)

LC/LD:	The median lethal dose, LD ₅₀ (abbreviation for “lethal dose, 50%”), LC ₅₀ (lethal concentration, 50%) is the dose required to kill half the members of a tested population after a specified test duration. LD ₅₀ figures are frequently used as a general indicator of a substance's acute toxicity.
NICNAS:	National Industrial Chemicals Notification and Assessment Scheme.
NOEC:	No-Observed-Effect-Concentration. The highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle (short-term) test, that causes no observable adverse effects on the test organisms (i.e., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls).
NOEL:	No-Observable-Effect-Level. It is the greatest concentration or amount of a substance, found by experiment or observation, that causes no alterations of morphology, functional capacity, growth, development, or life span of target organisms distinguishable from those observed in normal (control) organisms of the same species and strain under the same defined conditions of exposure.
NTP:	National Toxicology Program (USA Department of Health and Human Services).
OSHA:	Occupational Safety and Health Administration (USA).
PPE:	Personal Protective Equipment.
Safe Work Australia:	Safe Work Australia was formerly the Australian Safety and Compensation Council, which included the National Occupational Health and Safety Commission (NOHSC).
SDS:	Safety Data Sheet.
STEL:	Exposure standard - short term exposure limit, a 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.
SUSMP:	Standard for the Uniform Scheduling of Medicines and Poisons.
TDL₀:	Total Dose Low means the smallest deadly dose, which caused a toxic or other harmful effect after application on humans or animal.
TWA:	Exposure standard - time-weighted average, the average airborne concentration of a particular substance when calculated over a normal eight hour working day, for a five-day working week.
UN Number:	United Nations Number.
WHS:	Model work health and safety legislation introduced by the Australian government which consists of an integrated package of a model Work Health and Safety (WHS) Act, supported by model Work Health and Safety (WHS) Regulations, model Codes of Practice and a National Compliance and Enforcement Policy. The WHS Regulations implement a new system of chemical hazard classification, labelling and safety data sheet requirements based on the GHS.
Issue Date:	8 August 2016.
Supersedes	15 July 2011.
Issue Date:	
Revision	New issue according to GHS.
Information:	

SAFETY DATA SHEET

SECTION 16 – OTHER INFORMATION (CONTINUED)

Contact Point:	Regulatory Affairs Manager.
Telephone:	(07) 4633 3544.
Note:	Safety Data Sheets are updated frequently. Please ensure that you have a current copy.
Disclaimer:	This SDS summarises at the date of issue our best knowledge of the health and safety hazard information of this product, and in particular how to safely handle and use this product in the workplace. Since Planet Paints Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this SDS in the context of how the user intends to handle and use the product in the workplace. This SDS does not represent a guarantee for the properties of the product(s) described in terms of the legal warranty regulations. If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.