# RESENE HYPERSHIELD RESENE AUTOMOTIVE & LIGHT INDUSTRIAL

Version No: 1.3

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Issue Date: **11/04/2021** Print Date: **12/04/2021** L.GHS.NZL.EN

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

Product Identifier		
Product name	RESENE HYPERSHIELD	
Chemical Name	Not Applicable	
Synonyms	Not Available	
Proper shipping name	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	
Other means of identification	Not Available	

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

Relevant identified uses 10469

## Details of the supplier of the safety data sheet

Registered company name	RESENE AUTOMOTIVE & LIGHT INDUSTRIAL
Address	32-50 Vogel Street Naenae Wellington New Zealand
Telephone	+64 4 5770500
Fax	+64 4 5773327
Website	www.resene.co.nz
Email	advice@resene.co.nz

### Emergency telephone number

Association / Organisation	NZ POISONS (24hr 7 days)	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	0800 764766	+61 2 9186 1132
Other emergency telephone numbers	0800 737636	+64 800 700 112

Once connected and if the message is not in your prefered language then please dial 01

### **SECTION 2 Hazards identification**

### Classification of the substance or mixture

Classification <sup>[1]</sup>	Respiratory Sensitizer Category 1, Specific target organ toxicity - single exposure Category 2, Specific target organ toxicity - repeated exposure Category 2, Acute Aquatic Hazard Category 3, Flammable Liquid Category 2, Acute Toxicity (Inhalation) Category 4, Acute Terrestrial Hazard Category 3, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Reproductive Toxicity Category 2, Skin Sensitizer Category 1, Carcinogenicity Category 2, Acute Vertebrate Hazard Category 3
Legend:	1. Classified by Chernwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	3.1B, 6.1D (inhalation), 6.1D (oral), 6.3A, 6.4A, 6.5A (respiratory), 6.5B (contact), 6.7B, 6.8B, 6.9B, 9.1D, 9.2C, 9.3C

#### Label elements

Hazard pictogram(s)		
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Signal word

Danger

#### Hazard statement(s)

H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H371	May cause damage to organs. (Oral, Dermal, Inhalation)
H373	May cause damage to organs through prolonged or repeated exposure. (Oral, Dermal, Inhalation)
H402	Harmful to aquatic life.
H225	Highly flammable liquid and vapour.
H332	Harmful if inhaled.
H423	Harmful to the soil environment

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H433	Harmful to terrestrial vertebrates.

### Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P260	Do not breathe mist/vapours/spray.
P271	Use in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P270	Do not eat, drink or smoke when using this product.
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.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician/first aider.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
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.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider.
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.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P330	Rinse mouth.

### Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
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**

### Substances

See section below for composition of Mixtures

Ingredients are required by the Hazard Substances (Safety Data Sheets) Notice 2017 to be identified:

## Mixtures

CAS No	%[weight]	Name
4083-64-1	1-5	p-toluenesulfonyl isocyanate
1330-20-7	1-10	xylene
100-41-4	1-5	ethylbenzene
Not Available	1-5	benzortiazole derivatives
108-88-3	5-20	toluene
28182-81-2	10-30	hexamethylene diisocyanate polymer

## **SECTION 4 First aid measures**

### Description of first aid measures

Eye Contact	<ul> <li>If this product comes in contact with the eyes:</li> <li>Wash out immediately with fresh running water.</li> <li>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.</li> <li>Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
Skin Contact	<ul> <li>If skin contact occurs:</li> <li>Immediately remove all contaminated clothing, including footwear.</li> <li>Flush skin and hair with running water (and soap if available).</li> <li>Seek medical attention in event of irritation.</li> </ul>
Inhalation	<ul> <li>If fumes or combustion products are inhaled remove from contaminated area.</li> <li>Lay patient down. Keep warm and rested.</li> <li>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>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.</li> <li>Transport to hospital, or doctor.</li> <li>Following uptake by inhalation, move person to an area free from risk of further exposure. Oxygen or artificial respiration should be administered as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. A physician should be consulted.</li> </ul>
Ingestion	<ul> <li>If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li> <li>If swallowed do NOT induce vomiting.</li> <li>If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>Observe the patient carefully.</li> <li>Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>Seek medical advice.</li> <li>Avoid giving milk or oils.</li> <li>Avoid giving alcohol.</li> </ul>

Indication of any immediate medical attention and special treatment needed Treat symptomatically.

## **SECTION 5 Firefighting measures**

#### 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.
- ▶ Foam.

### Special hazards arising from the substrate or mixture

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

### Advice for firefighters

-			
Fire Fighting	Alert Fire Brigade and tell them location and nature of hazard.		
Fire/Explosion Hazard	<ul> <li>Liquid and vapour are highly flammable.</li> <li>Combustion products include: carbon dioxide (CO2) isocyanates</li> <li>hydrogen cyanide</li> <li>and minor amounts of</li> <li>nitrogen oxides (NOx)</li> <li>other pyrolysis products typical of burning organic material.</li> <li>When heated at high temperatures many isocyanates decompose rapidly generating a vapour which pressurises containers, possibly to the point of rupture.</li> </ul>		

### **SECTION 6 Accidental release measures**

#### Personal precautions, protective equipment and emergency procedures

See section 8

## **Environmental precautions**

See section 12

### Methods and material for containment and cleaning up

Major Spills

Minor Spills Remove all ignition sources. Contain spill with inert non- combustible absorbent then place in suitable, labelled container for waste disposal. Wipe up. Clean area with large quantity of water to complete clean- up.

Remove all ignition sources. Clear area of personnel and move upwind. Wear appropriate personnel protective equipment and clothing to prevent exposure. Avoid breathing in mists or vapours and skin or eyes contact. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible contain the spill. Place inert absorbent, non- combustible material onto spillage. Use clean non- sparking tools to collect the material and place into suitable labelled containers for subsequent recycling or disposal.

Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local
water and waste management authority.
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.
For isocyanate spills of less than 40 litres (2 m2):
Evacuate area from everybody not dealing with the emergency, keep them upwind and prevent further access, remove ignition sources and, if inside building, ventilate area as well as possible.

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

## **SECTION 7 Handling and storage**

Precautions for safe handling			
Safe handling	<ul> <li>Containers, even those that have been emptied, may contain explosive vapours.</li> <li>Electrostatic discharge may be generated during pumping - this may result in fire.</li> <li>Avoid unnecessarypersonal contact, including inhalation.</li> <li>DO NOT allow clothing wet with material to stay in contact with skin</li> </ul>		
Other information	Consider storage under inert gas. for commercial quantities of isocyanates: •Isocyanates should be stored in adequately bunded areas. • Store in original containers in approved flame-proof area.		

## Conditions for safe storage, including any incompatibilities

Suitable container	<ul> <li>Packing as supplied by manufacturer.</li> <li>For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type.</li> </ul>			
Storage incompatibility	<ul> <li>Toluene:</li> <li>reacts violently with strong oxidisers, bromine, bromine trifluoride, chlorine, hydrochloric acid/ sulfuric acid mixture, 1,3-dichloro-5,5-dimethyl-2,4-imidazolidindione, dinitrogen tetraoxide, fluorine, concentrated nitric acid, nitrogen dioxide, silver chloride, sulfur dichloride, uranium fluoride, vinyl acetate</li> <li>forms explosive mixtures with strong acids, strong oxidisers, silver perchlorate, tetranitromethane</li> <li>is incompatible with bis-toluenediazo oxide</li> <li>attacks some plastics, rubber and coatings</li> <li>may generate electrostatic charges, due to low conductivity, on flow or agitation.</li> <li>Xylenes:</li> <li>may ignite or explode in contact with strong oxidisers, 1,3-dichloro-5,5-dimethylhydantoin, uranium fluoride</li> <li>attack some plastics, rubber and coatings</li> <li>may generate electrostatic charges on flow or agitation due to low conductivity.</li> <li>Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents.</li> <li>For alkyl aromatics:</li> <li>The alkyl side chain of aromatic rings can undergo oxidation by several mechanisms.</li> <li>Avoid reaction with water, alcohols and detergent solutions.</li> <li>A range of exothermic decomposition energies for isocyanates is given as 20-30 kJ/mol.</li> </ul>			

## **SECTION 8 Exposure controls / personal protection**

#### **Control parameters**

Occupational Exposure Limits (OEL)

## INGREDIENT DATA

Not Available

Notes:

## Emergency Limits

Ingredient	TEEL-1	TEEL-2		TEEL-3
xylene	Not Available	Not Available		Not Available
ethylbenzene	Not Available	Not Available		Not Available
toluene	Not Available	Not Available		Not Available
hexamethylene diisocyanate polymer	7.8 mg/m3	86 mg/m3		510 mg/m3
In the Read				
Ingredient	Original IDLH		Revised IDLH	
p-toluenesulfonyl isocyanate	Not Available		Not Available	
xylene	900 ppm		Not Available	
ethylbenzene	800 ppm		Not Available	
toluene	500 ppm		Not Available	
hexamethylene diisocyanate polymer	Not Available		Not Available	
Occupational Exposure Banding				
Ingredient	Occupational Exposure Band Rating		Occupational Exposure Band Limit	

Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit		
p-toluenesulfonyl isocyanate	E	≤ 0.1 ppm		
xylene	E	≤ 0.1 ppm		
ethylbenzene	E	≤ 0.1 ppm		
toluene	E	≤ 0.1 ppm		
hexamethylene diisocyanate polymer	E	≤ 0.1 ppm		
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.			

#### MATERIAL DATA

IFRA Prohibited Fragrance Substance

The International Fragrance Association (IFRA) Standards form the basis for the globally accepted and recognized risk management system for the safe use of fragrance ingredients and are part of the IFRA Code of Practice.

for isocvanates:

Some jurisdictions require that health surveillance be conducted on occupationally exposed workers.

for xylenes:

IDLH Level: 900 ppm

Odour Threshold Value: 20 ppm (detection), 40 ppm (recognition)

NOTE: Detector tubes for o-xylene, measuring in excess of 10 ppm, are available commercially.

for ethyl benzene:

Odour Threshold Value: 0.46-0.60 ppm

NOTE: Detector tubes for ethylbenzene, measuring in excess of 30 ppm, are commercially available.

For toluene:

Odour Threshold Value: 0.16-6.7 (detection), 1.9-69 (recognition)

NOTE: Detector tubes measuring in excess of 5 ppm, are available.

#### Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. All processes in which isocyanates are used should be enclosed wherever possible.			
Personal protection				
Eye and face protection	Safety glasses with side shields.			
Skin protection	See Hand protection below			
Hands/feet protection	<ul> <li>NOTE:</li> <li>The material may produce skin sensitisation in predisposed individuals.</li> <li>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.</li> <li>Do NOT wear natural rubber (latex gloves).</li> <li>Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves.</li> <li>DO NOT use skin cream unless necessary and then use only minimum amount.</li> </ul>			
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.   Overalls.  Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.			

### **Respiratory protection**

Full face respirator with supplied air.

- + Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

For spraying or operations which might generate aerosols:

Full face respirator with supplied air.

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

## Information on basic physical and chemical properties

Appearance	Moisture sensitive. Colourless clear liquid with characteristic odour		
	1		1
Physical state	Liquid	Relative density (Water= 1)	1.0
Odour	Not Available	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 / freezing point (°C)	Not Available	Viscosity (cSt)	60
Initial boiling point and boiling range (°C)	110-130	Molecular weight (g/mol)	Not Available
Flash point (°C)	5	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	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)	51
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Reacts	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	423

## **SECTION 10 Stability and reactivity**

Reactivity	See section 7
Chemical stability	Unstable in the presence of incompatible materials.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

## **SECTION 11 Toxicological information**

## Information on toxicological effects

Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. Inhalation of vapours may cause drowsiness and dizziness. 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. Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. The acute toxicity of inhaled alkylbenzenes is best described by central nervous system depression. Headache, fatigue, lassitude, irritability and gastrointestinal disturbances (e.g., nausea, anorexia and flatulence) are the most common symptom of xylene overexposure. Xylene is a central nervous system depressant.	
Ingestion	Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result. At sufficiently high doses the material may be hepatotoxic (i.e. poisonous to the liver).	
Skin Contact	The material may accentuate any pre-existing dermatitis condition Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. The material produces moderate skin irritation; evidence exists, or practical experience predicts, that the material either produces moderate inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant, but moderate, inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present twenty-four hours or more after the end of the exposure period.	
Eye	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.	
Chronic	On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment. Practical evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a substantial number of individuals at a greater frequency than would be expected from the response of a normal population.	

	Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure.		
	There is sufficient evidence to provide a strong presumption that human exposure to the material may result in impaired fertility on the basis of: - clear evidence in animal studies of impaired fertility in the absence of toxic effects, or evidence of impaired fertility occurring at around the same dose levels as other toxic effects but which is not a secondary non-specific consequence of other toxic effects. Polyisocyanates still contain small amounts of monomeric isocyanate (typically <0.5 parts per weight) and both – the polyisocyanate and the monomer - have toxicological importance. Chronic toluene habituation occurs following intentional abuse (glue sniffing) or from occupational exposure. 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. Prolonged or repeated contact with xylenes may cause defatting dermatitis with drying and cracking. Isocyanate vapours/mists are irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis with wheezing, gasping and severe distress, even sudden loss of consciousness, and pulmonary oedema.		
RESENE HYPERSHIELD	TOXICITY Not Available	IRRITATION	

	тохісіту		IRRITATION	
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>		Not Available	
p-toluenesulfonyl isocyanate	Inhalation(Rat) LC50; >320 ppm4h <sup>[2]</sup>			
	Oral(Rat) LD50: 2234 mg/kg <sup>[2]</sup>			
	ΤΟΧΙCITY	IRRITATI	ON .	
	Dermal (rabbit)   D50: >1700 mg/kg <sup>[2]</sup>	Eve (hum	an): 200 ppm irritant	
	Inhalation(Rat)   C50: 5922 ppm4h <sup>[1]</sup>	Eve (rabb	it): 5 mg/24h SEVERE	
xvlene	Oral(Rat) LD50: 11.494 mg/kg <sup>[1]</sup>	Eve (rabb	it): 87 mg mild	
.,		Eve: adve	erse effect observed (irritating) <sup>[1]</sup>	
		Skin (rabl	bit):500 mg/24h moderate	
		Skin: adv	erse effect observed (irritating) <sup>[1]</sup>	
	тохісіту	IRRITATION		
	Dermal (rabbit) LD50; ~20.531 mg/kg <sup>[1]</sup>	Eve (rabbit):	500 mg - SEVERE	
ethvlbenzene	Inhalation(Rat) LC50: 17.2 mg/l4h <sup>[2]</sup>	Eve: no adve	rse effect observed (not irritating) <sup>[1]</sup>	
	Oral(Rat) LD50: ~3523 mg/kg <sup>[2]</sup>	3 mg/kg <sup>[2]</sup> Skin (rabbit): 15 mg/24h mild		
	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>			
	тохісіту	IRRITATION		
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[1]</sup>	Eye (rabbit):	2mg/24h - SEVERE	
	Inhalation(Rat) LC50; 12.528.8 mg/l4h <sup>[2]</sup>	Eye (rabbit):		
	Oral(Rat) LD50; 636 mg/kg <sup>[2]</sup>	Eye (rabbit):100 mg/30sec - mild		
toluene		Eye: advers	e effect observed (irritating) <sup>[1]</sup>	
		Skin (rabbit)	:20 mg/24h-moderate	
		Skin (rabbit)	:500 mg - moderate	
		Skin: advers	e effect observed (irritating) <sup>[1]</sup>	
		Skin: no adv	erse effect observed (not irritating) <sup>[1]</sup>	
	ΤΟΧΙΟΙΤΥ		IRRITATION	
hexamethylene diisocyanate	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>		Skin (rabbit): 500 mg - moderate	
polymer	Inhalation(Rat) LC50; 0.0520.5 mg/L4h <sup>[1]</sup>			
	Oral(Rat) LD50; >2000 mg/kg <sup>[1]</sup>			
Legend:	<ol> <li>value obtained from Europe ECHA Registered Sub- specified data extracted from RTECS - Register of Tox</li> </ol>	stances - Acute toxicity 2. xic Effect of chemical Sub	value obtained from manufacturer's SDS. Unless otherwise stances	

P-TOLUENESULFONYL ISOCYANATE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. for p-toluenesulfonyl isocyanate The acute oral toxicity (LD50) of PTSI is 2600 mg/kg. for p-toluenesulfonamide (PTSA): PTSA was studied for oral toxicity in rats in a single dose toxicity test at doses of 889, 1333, 2000 and 3000 mg/kg in females and 2000 mg/kg in males, and in an OECD combined repeat dose and reproductive/developmental toxicity screening test at doses of 0, 120, 300 and 750 mg/kg/day in both sexes .PTSA was also tested for mutagenicity with assays for reverse mutation in bacteria and chromosomal aberrations in cultured Chinese hamster (CHL) cells.			
XYLENE	Reproductive effector in rats The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.			
ETHYLBENZENE	Liver changes, utheral tract, effects on fertility, foetotoxicity, specific developmental abnormalities (musculoskeletal system) recorded. Ethylbenzene is readily absorbed following inhalation, oral, and dermal exposures, distributed throughout the body, and excreted primarily through urine. <b>NOTE:</b> Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.			
TOLUENE	For toluene: Acute Toxicity Humans exposed to intermediate to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis, and death.			
HEXAMETHYLENE DIISOCYANATE POLYMER	* Bayer SDS ** Ardex SDS No significant acute toxicological data identified in literature search. The material may produce moderate eve irritation leading to inflammation			
RESENE HYPERSHIELD & P-TOLUENESULFONYL ISOCYANATE & HEXAMETHYLENE DIISOCYANATE POLYMER	Allergic reactions which develop in the respiratory passages as bronchial asthma or rhinoconjunctivitis, are mostly the result of reactions of the allergen with specific antibodies of the IgE class and belong in their reaction rates to the manifestation of the immediate type. Particular attention is drawn to so-called atopic diathesis which is characterised by an increased susceptibility to allergic rhinitis, allergic bronchial asthma and atopic eczema (neurodermatitis) which is associated with increased IgE synthesis. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Isocyanate vapours/mists are irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis with wheering gasping and severe distress, even sudden loss of consciousness, and nulmonary gedema			
RESENE HYPERSHIELD & HEXAMETHYLENE DIISOCYANATE POLYMER	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.			
XYLENE & ETHYLBENZENE	The material may produce severe irritation to the eye causing pronounced inflammation.			
XYLENE & ETHYLBENZENE & TOLUENE & HEXAMETHYLENE DIISOCYANATE POLYMER	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic).			
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: X – Data either n ✓ – Data availab	not available or does not fill the criteria for classification le to make classification	

## **SECTION 12 Ecological information**

	Endpoint	Test Duration (hr)		Species	Value	5	Source
RESENE HTPERSHIELD	Not Available	Not Available		Not Available	Not Available	1	Not Available
	Endpoint	Test Duration (hr)	Spe	ecies		Value	Source
	NOEC(ECx)	72	Alg	ae or other aquatic plan	ts	10mg/l	2
p-toluenesulfonyl isocyanate	EC50	48	Cru	Crustacea >1		>100mg/	1 2
	LC50	96	Fis	h		>45mg/l	2
	EC50	72	Alg	Algae or other aquatic plants		25mg/l	2
	Endpoint	Test Duration (hr)	Spec	ies		Value	Source
	EC50	48	Crus	tacea		1.8mg/l	2
xylene	LC50	96	Fish			2.6mg/l	2
	EC50	72	Algae	e or other aquatic plants		4.6mg/l	2
	EC50(ECx)	Not Reported	Fish			0.017mg/L	4

	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48	Crustacea	1.37-4.4mg/l	4
	LC50	96	Fish	1.129-1.259mg/L	4
etnyibenzene	NOEC(ECx)	720	Fish	0.002mg/L	4
	EC50	72	Algae or other aquatic plants	>1.902mg/L	4
	EC50	96	Algae or other aquatic plants	>1.902mg/L	4
	Endpoint	Test Duration (hr)	Species	Value	Source
toluene	LC50	96	Fish	>1.055<1.809mg/L	4
	EC50	48	Crustacea	3.78mg/L	5
	NOEC(ECx)	96	Crustacea	0.104mg/L	4
	EC50	96	Algae or other aquatic plants >1		4
	Endpoint	Test Duration (hr)	Species	Value	Source
examethylene diisocyanate	LC50	96	Fish	8.9mg/l	2
polymer	NOEC(ECx)	72	Algae or other aquatic plants	uatic plants 50mg/l	
		72 Algae or other aquatic plants		1000 //	-

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and /or delayed, to the structure and/ or functioning of natural ecosystems.

Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

May cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark.

For aromatic hydrocarbons:

Within an aromatic series, acute toxicity increases with increasing alkyl substitution on the aromatic nucleus.

for polyisocyanates:

Polyisocyanates are not readily biodegradable.

Hydrolysis would represents the primary fate mechanism for the majority of the commercial isocyanate monomers, but, is tempered somewhat by the lack of water solubility. For xylenes :

log Koc : 2.05-3.08 Koc : 25.4-204 Half-life (hr) air : 0.24-42 Half-life (hr) H2O surface water : 24-672 Half-life (hr) H2O ground : 336-8640 Half-life (hr) soil : 52-672 Henry's Pa m3 /mol: 637-879 Henry's atm m3 /mol: 7.68E-03 BOD 5 if unstated: 1.4,1% COD : 2.56,13% ThOD : 3.125 BCF : 23 log BCF : 1.17-2.41 **Environmental Fate** Terrestrial fate:: Measured Koc values of 166 and 182, indicate that 3-xylene is expected to have moderate mobility in soil. For toluene: log Kow : 2.1-3 log Koc : 1.12-2.85 Koc : 37-260 log Kom : 1.39-2.89 Half-life (hr) air : 2.4-104 Half-life (hr) H2O surface water : 5.55-528 Half-life (hr) H2O ground : 168-2628 Half-life (hr) soil : <48-240 Henry's Pa m3 /mol: 518-694 Henry's atm m3 /mol: 5.94E-03 BOD 5 0.86-2.12, 5% COD : 0.7-2.52,21-27% ThOD : 3.13 BCF : 1.67-380 log BCF : 0.22-3.28 Environmental fate:

Transport: The majority of toluene evaporates to the atmosphere from the water and soil. It is moderately retarded by adsorption to soils rich in organic material (Koc = 259), therefore, transport to ground water is dependent on the soil composition. DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
p-toluenesulfonyl isocyanate	HIGH	HIGH
xylene	HIGH (Half-life = 360 days)	LOW (Half-life = 1.83 days)
ethylbenzene	HIGH (Half-life = 228 days)	LOW (Half-life = 3.57 days)
toluene	LOW (Half-life = 28 days)	LOW (Half-life = 4.33 days)

Ingredient	Persistence: Water/Soil	Persistence: Air
hexamethylene diisocyanate polymer	HIGH	HIGH

### Bioaccumulative potential

Diaccumulative potential		
Bioaccumulation		
LOW (LogKOW = 2.3424)		
MEDIUM (BCF = 740)		
LOW (BCF = 79.43)		
LOW (BCF = 90)		
LOW (LogKOW = 7.5795)		

## Mobility in soil

Ingredient	Mobility
p-toluenesulfonyl isocyanate	LOW (KOC = 882.1)
ethylbenzene	LOW (KOC = 517.8)
toluene	LOW (KOC = 268)
hexamethylene diisocyanate polymer	LOW (KOC = 18560000)

### **SECTION 13 Disposal considerations**

## Waste treatment methods Product / Packaging disposal • Containers may still present a chemical hazard/ danger when empty. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. • DO NOT allow wash water from cleaning or process equipment to enter drains. • Recycle wherever possible.

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

### **Disposal Requirements**

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package.

### **SECTION 14 Transport information**

### Labels Required

Marine Pollutant	NO
HAZCHEM	•3YE

### Land transport (UN)

UN number	1263		
UN proper shipping name	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)		
Transport hazard class(es)	Class     3       Subrisk     Not Applicable		
Packing group	1		
Environmental hazard	Not Applicable		
Special precautions for user	Special provisions     163; 367       Limited quantity     5 L		

## Air transport (ICAO-IATA / DGR)

UN number	1263	
UN proper shipping name	Paint (including paint, lac	cquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base)
Transport barard class(co)	ICAO/IATA Class	3
Transport nazard class(es)	ICAO / IATA Subrisk	Not Applicable

	ERG Code 3L		
Packing group	I		
Environmental hazard	Not Applicable		
	Special provisions	A3 A72 A192	
Special precautions for user	Cargo Only Packing Instructions	364	
	Cargo Only Maximum Qty / Pack	60 L	
	Passenger and Cargo Packing Instructions	353	
	Passenger and Cargo Maximum Qty / Pack	5 L	
	Passenger and Cargo Limited Quantity Packing Instructions	Y341	
	Passenger and Cargo Limited Maximum Qty / Pack	1 L	

### Sea transport (IMDG-Code / GGVSee)

UN number	1263		
UN proper shipping name	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)		
Transport hazard class(es)	IMDG Class IMDG Subrisk	3 Not Applicable	
Packing group	П		
Environmental hazard	Not Applicable		
Special precautions for user	EMS Number Special provisions Limited Quantities	F-E , S-E 163 367 5 L	

Transport in bulk according to Annex II of MARPOL and the IBC code Not Applicable

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

Product name	Group
p-toluenesulfonyl isocyanate	Not Available
xylene	Not Available
ethylbenzene	Not Available
benzortiazole derivatives	Not Available
toluene	Not Available
hexamethylene diisocyanate polymer	Not Available

## Transport in bulk in accordance with the ICG Code

Product name	Ship Type
p-toluenesulfonyl isocyanate	Not Available
xylene	Not Available
ethylbenzene	Not Available
benzortiazole derivatives	Not Available
toluene	Not Available
hexamethylene diisocyanate polymer	Not Available

## **SECTION 15 Regulatory information**

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

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard		
HSR002669	Surface Coatings and Colourants (Flammable, Toxic [6.7]) Group Standard 2017		
p-toluenesulfonyl isocyanate is found on the following regulatory lists			
New Zealand Approved Hazardous Substances with controls New Zealand Inventory of Chemicals (NZIoC)			

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification New Zealand Inventory of Chemicals (NZIOC) New Zealand Workplace Exposure Standards (WES)

of Chemicals - Classification Data

xylene is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)
or originidato	
ethylbenzene is found on the following regulatory lists	
Chemical Footprint Project - Chemicals of High Concern List	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC	of Chemicals
Monographs	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC	of Chemicals - Classification Data
Monographs - Group 2B: Possibly carcinogenic to humans	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Approved Hazardous Substances with controls	New Zealand Workplace Exposure Standards (WES)
toluene is found on the following regulatory lists	
Chemical Footprint Project - Chemicals of High Concern List	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicale - Classification Data
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Approved Hazardous Substances with controls	New Zealand Workplace Exposure Standards (WES)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification	New Zealand Workplace Exposure Standards (WES)
of Chemicals	
hexamethylene diisocyanate polymer is found on the following regulatory lists	
New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data	
Hazardous Substance Location	
Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.	

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
3.1B	100 L in containers more than 5 L	50 L
3.1B	250 L in containers up to and including 5 L	50 L

### **Certified Handler**

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

### Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
6.5A or 6.5B	120	1	3	
3.1B				1L

# Tracking Requirements

Not Applicable

#### **National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
New Zealand - NZIoC	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

#### **SECTION 16 Other information**

Revision Date	11/04/2021
Initial Date	11/04/2021

### **SDS Version Summary**

Version	Issue Date	Sections Updated
0.3.1.1.1	11/04/2021	Classification, Environmental

#### 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.

end of SDS

### **RESENE HYPERSHIELD**

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment.

#### Definitions and abbreviations

PC-TWA: Permissible Concentration-Time Weighted Average PC-STEL: Permissible Concentration-Short Term Exposure Limit IARC: International Agency for Research on Cancer ACGIH: American Conference of Governmental Industrial Hygienists STEL: Short Term Exposure Limit TEEL: Temporary Emergency Exposure Limit。 IDLH: Immediately Dangerous to Life or Health Concentrations ES: Exposure Standard OSF: Odour Safety Factor NOAEL :No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level TLV: Threshold Limit Value LOD: Limit Of Detection OTV: Odour Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index AIIC: Australian Inventory of Industrial Chemicals DSL: Domestic Substances List NDSL: Non-Domestic Substances List IECSC: Inventory of Existing Chemical Substance in China EINECS: European INventory of Existing Commercial chemical Substances ELINCS: European List of Notified Chemical Substances NLP: No-Longer Polymers ENCS: Existing and New Chemical Substances Inventory KECI: Korea Existing Chemicals Inventory NZIoC: New Zealand Inventory of Chemicals PICCS: Philippine Inventory of Chemicals and Chemical Substances TSCA: Toxic Substances Control Act TCSI: Taiwan Chemical Substance Inventory INSQ: Inventario Nacional de Sustancias Químicas NCI: National Chemical Inventory FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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