

# RESENE UNIVERSAL FLATTING BINDER

## RESENE AUTOMOTIVE & LIGHT INDUSTRIAL

Version No: 1.1  
Safety Data Sheet according to HSNO Regulations

Issue Date: **05/03/2020**  
Print Date: **05/03/2020**  
L.GHS.NZL.EN

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

#### Product Identifier

Product name	RESENE UNIVERSAL FLATTING BINDER
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	8773
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#### 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	+64 800 700 112
Other emergency telephone numbers	0800 737636	+61 2 9186 1132

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

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

Classification [1]	Flammable Liquid Category 3, Specific target organ toxicity - single exposure Category 2, Specific target organ toxicity - repeated exposure Category 2, Acute Aquatic Hazard Category 3, Eye Irritation Category 2, Reproductive Toxicity Category 1, Carcinogenicity Category 2, Chronic Aquatic Hazard Category 4, Skin Corrosion/Irritation Category 3
Legend:	1. Classified by Chemwatch; 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	3.1C, 6.3B, 6.4A, 6.7B, 6.8A, 6.9B, 9.1D

#### Label elements

Hazard pictogram(s)	
SIGNAL WORD	<b>DANGER</b>

#### Hazard statement(s)

H226	Flammable liquid and vapour.
H371	May cause damage to organs. (Not specified) (Oral, Dermal, Inhalation)
H373	May cause damage to organs through prolonged or repeated exposure. (Not specified) (Oral, Dermal, Inhalation)
H402	Harmful to aquatic life.
H319	Causes serious eye irritation.
H360	May damage fertility or the unborn child.
H351	Suspected of causing cancer.
H413	May cause long lasting harmful effects to aquatic life.
H316	Causes mild skin irritation.

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## RESENE UNIVERSAL FLATTING BINDER

## 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.
P280	Wear protective gloves/protective clothing/eye protection/face 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.
P273	Avoid release to the environment.

## Precautionary statement(s) Response

P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
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.
P314	Get medical advice/attention if you feel unwell.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

## 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.
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## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

CAS No	%[weight]	Name
108-65-6	60-80	<u>propylene glycol monomethyl ether acetate, alpha-isomer</u>
1330-20-7	1-3	<u>xylene</u>
100-41-4	0.5-1	<u>ethylbenzene</u>
872-50-4	0.1-0.5	<u>N-methyl-2-pyrrolidone</u>

## SECTION 4 FIRST AID MEASURES

## Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <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	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <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 style="list-style-type: none"> <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, without delay.</li> </ul>
Ingestion	<ul style="list-style-type: none"> <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> </ul>

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## RESENE UNIVERSAL FLATTING BINDER

- ▶ If swallowed do **NOT** induce vomiting.
- ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- ▶ Observe the patient carefully.
- ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- ▶ Seek medical advice.
- ▶ Avoid giving milk or oils.
- ▶ Avoid giving alcohol.

**Indication of any immediate medical attention and special treatment needed**

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

for simple esters:

**BASIC TREATMENT**

- ▶ Establish a patent airway with suction where necessary.
- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- ▶ Monitor and treat, where necessary, for pulmonary oedema .
- ▶ Monitor and treat, where necessary, for shock.
- ▶ **DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- ▶ Give activated charcoal.

**ADVANCED TREATMENT**

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

**EMERGENCY DEPARTMENT**

- ▶ Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- ▶ Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- ▶ Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L. *EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994*

For acute or short term repeated exposures to xylene:

- ▶ Gastro-intestinal absorption is significant with ingestions. For ingestions exceeding 1-2 ml (xylene)/kg, intubation and lavage with cuffed endotracheal tube is recommended. The use of charcoal and cathartics is equivocal.
- ▶ Pulmonary absorption is rapid with about 60-65% retained at rest.
- ▶ Primary threat to life from ingestion and/or inhalation, is respiratory failure.
- ▶ Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO<sub>2</sub> < 50 mm Hg or pCO<sub>2</sub> > 50 mm Hg) should be intubated.
- ▶ Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- ▶ A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- ▶ Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.

**BIOLOGICAL EXPOSURE INDEX - BEI**

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
Methylhippu-ric acids in urine	1.5 gm/gm creatinine 2 mg/min	End of shift Last 4 hrs of shift	

**SECTION 5 FIREFIGHTING MEASURES****Extinguishing media**

- ▶ Alcohol stable foam.

**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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**Advice for firefighters**

<b>Fire Fighting</b>	▶ Alert Fire Brigade and tell them location and nature of hazard.
<b>Fire/Explosion Hazard</b>	▶ Liquid and vapour are flammable. Combustion products include: carbon dioxide (CO <sub>2</sub> ) carbon monoxide (CO) metal oxides other pyrolysis products typical of burning organic material.

## RESENE UNIVERSAL FLATTING BINDER

## 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

Minor Spills	<ul style="list-style-type: none"> <li>Remove all ignition sources.</li> </ul>
Major Spills	<p>Chemical Class: ester and ethers</p> <p>For release onto land: recommended sorbents listed in order of priority.</p> <ul style="list-style-type: none"> <li>Clear area of personnel and move upwind.</li> </ul>

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

## SECTION 7 HANDLING AND STORAGE

## Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> <li>Containers, even those that have been emptied, may contain explosive vapours. The tendency of many ethers to form explosive peroxides is well documented. The substance accumulates peroxides which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate the peroxides.</li> <li>Electrostatic discharge may be generated during pumping - this may result in fire.</li> <li>Avoid all personal contact, including inhalation.</li> <li><b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> </ul>
Other information	<ul style="list-style-type: none"> <li>Store in original containers in approved flammable liquid storage area.</li> </ul>

## Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> <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	<p>Xylenes:</p> <ul style="list-style-type: none"> <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> </ul> <p>For alkyl aromatics:</p> <p>The alkyl side chain of aromatic rings can undergo oxidation by several mechanisms.</p> <ul style="list-style-type: none"> <li>Esters react with acids to liberate heat along with alcohols and acids.</li> <li>Glycol ethers may form peroxides under certain conditions; the potential for peroxide formation is enhanced when these substances are used in processes such as distillation where they are concentrated or even evaporated to near-dryness or dryness; storage under a nitrogen atmosphere is recommended to minimise the possible formation of highly reactive peroxides</li> <li>Nitrogen blanketing is recommended if transported in containers at temperatures within 15 deg C of the flash-point and at or above the flash-point - large containers may first need to be purged and inerted with nitrogen prior to loading</li> <li>In the presence of strong bases or the salts of strong bases, at elevated temperatures, the potential exists for runaway reactions.</li> </ul> <p>Propylene glycol monomethyl ether acetate:</p> <ul style="list-style-type: none"> <li>may polymerise unless properly inhibited due to peroxide formation</li> <li>should be isolated from UV light, high temperatures, free radical initiators</li> <li>may react with strong oxidisers to produce fire and/ or explosion</li> <li>reacts violently with sodium peroxide, uranium fluoride</li> <li>is incompatible with sulfuric acid, nitric acid, caustics, aliphatic amines, isocyanates, boranes</li> </ul>

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

## Control parameters

## OCCUPATIONAL EXPOSURE LIMITS (OEL)

## INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	xylene	Dimethylbenzene (see Xylene)	50 ppm / 217 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	ethylbenzene	Ethyl benzene	100 ppm / 434 mg/m3	543 mg/m3 / 125 ppm	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	N-methyl-2-pyrrolidone	1-Methyl-2-pyrrolidone	25 ppm / 103 mg/m3	309 mg/m3 / 75 ppm	Not Available	(skin) - Skin absorption

## EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
propylene glycol monomethyl ether acetate, alpha-isomer	Propylene glycol monomethyl ether acetate, alpha-isomer; (1-Methoxypropyl-2-acetate)	Not Available	Not Available	Not Available
xylene	Xylenes	Not Available	Not Available	Not Available

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## RESENE UNIVERSAL FLATTING BINDER

ethylbenzene	Ethyl benzene	Not Available	Not Available	Not Available
N-methyl-2-pyrrolidone	Methyl 2-pyrrolidinone, 1-; (N-Methylpyrrolidone)	30 ppm	32 ppm	190 ppm
Ingredient	Original IDLH	Revised IDLH		
propylene glycol monomethyl ether acetate, alpha-isomer	Not Available	Not Available		
xylene	900 ppm	Not Available		
ethylbenzene	800 ppm	Not Available		
N-methyl-2-pyrrolidone	Not Available	Not Available		

## 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 N-methyl-2-pyrrolidone (NMP):

Reports of skin and eye irritation and chronic headaches have been reported in workers exposed to 1-methyl-2-pyrrolidone.

For n-butyl acetate

Odour Threshold Value: 0.0063 ppm (detection), 0.038-12 ppm (recognition)

Exposure at or below the recommended TLV-TWA is thought to prevent significant irritation of the eyes and respiratory passages as well as narcotic effects.

for heptane (all isomers)

The TLV-TWA is protective against narcotic and irritant effects which are greater than those of pentane or n-hexane but less than those of octane.

for propylene glycol monomethyl ether acetate (PGMEA)

Saturated vapour concentration: 4868 ppm at 20 C.

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.

## Exposure controls

<b>Appropriate engineering controls</b>	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard.
<b>Personal protection</b>	
<b>Eye and face protection</b>	▶ Safety glasses with side shields.
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	▶ Wear chemical protective gloves, e.g. PVC. For esters: ▶ Do NOT use natural rubber, butyl rubber, EPDM or polystyrene-containing materials. 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.
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	▶ Overalls. ▶ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.

## Recommended material(s)

## GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

RESENE UNIVERSAL FLATTING BINDER

Material	CPI
BUTYL	C
BUTYL/NEOPRENE	C
HYPALON	C
NAT+NEOPR+NITRILE	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PE	C

## Respiratory protection

Type A Filter of sufficient capacity.

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 5 x ES	A-AUS / Class 1	-	A-PAPR-AUS / Class 1
up to 25 x ES	Air-line*	A-2	A-PAPR-2
up to 50 x ES	-	A-3	-
50+ x ES	-	Air-line**	-

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ 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

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## RESENE UNIVERSAL FLATTING BINDER

PE/EVAL/PE	C
PVA	C
PVC	C
PVDC/PE/PVDC	C
TEFLON	C
VITON	C
VITON/BUTYL	C

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

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

<b>Appearance</b>	Note that all of the monopropylene glycol ethers may exist in two isomeric forms, alpha or beta. Note that all of the monopropylene glycol ethers may exist in two isomeric forms, alpha or beta. Colourless slightly hazy liquid		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	1.064
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	150	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	55	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Flammable.	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	82.5
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Immiscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	793

## SECTION 10 STABILITY AND REACTIVITY

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

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

<b>Inhaled</b>	<p>Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation.</p> <p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by inhalation".</p> <p>Mice exposed at up to 3000 ppm PGMEA 6 hr/day for a total of 9 days during an 11-day period showed no pronounced effect on the weights of liver, kidneys, heart, spleen, thymus or testes.</p> <p>Headache, fatigue, lassitude, irritability and gastrointestinal disturbances (e.g., nausea, anorexia and flatulence) are the most common symptoms of xylene overexposure.</p> <p>Xylene is a central nervous system depressant.</p>
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## RESENE UNIVERSAL FLATTING BINDER

<b>Ingestion</b>	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. The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". Accidental ingestion of the material may be damaging to the health of the individual.
<b>Skin Contact</b>	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.  Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant 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. Repeated application of commercial grade PGMEA to the skin of rabbits for 2-weeks caused slight redness and very slight exfoliation. 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.
<b>Eye</b>	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. Undiluted propylene glycol monomethyl ether acetate (PGMEA) causes moderate discomfort, slight conjunctival redness and slight corneal injury in rabbits
<b>Chronic</b>	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. Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. There is sufficient evidence to establish a causal relationship between human exposure to the material and impaired fertility There is sufficient evidence to provide a strong presumption that human exposure to the material may result in developmental toxicity, generally on the basis of: - clear results in appropriate animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects. Repeated exposure to higher concentrations of propylene glycol monomethyl ether acetate (PGMEA) (1000 ppm and above) causes mild liver and kidney damage in animals. Prolonged or repeated contact with xylenes may cause defatting dermatitis with drying and cracking. Studies with some glycol ethers (principally the monoethylene glycols) and their esters indicate reproductive changes, testicular atrophy, infertility and kidney function changes.

RESENE UNIVERSAL FLATTING BINDER	TOXICITY	IRRITATION
	Not Available	Not Available
propylene glycol monomethyl ether acetate, alpha-isomer	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Inhalation (rat) LC50: 6510.0635325 mg/l/6h <sup>[2]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
Oral (rat) LD50: 5155 mg/kg <sup>[1]</sup>		
xylene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1700 mg/kg <sup>[2]</sup>	Eye (human): 200 ppm irritant
	Inhalation (rat) LC50: 4994.295 mg/l/4h <sup>[2]</sup>	Eye (rabbit): 5 mg/24h SEVERE
	Oral (rat) LD50: 3523-8700 mg/kg <sup>[2]</sup>	Eye (rabbit): 87 mg mild
		Eye: adverse effect observed (irritating) <sup>[1]</sup>
		Skin (rabbit):500 mg/24h moderate
	Skin: adverse effect observed (irritating) <sup>[1]</sup>	
ethylbenzene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup>	Eye (rabbit): 500 mg - SEVERE
	Inhalation (mouse) LC50: 17.75 mg/l/2H <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (rat) LD50: 3500 mg/kg <sup>[2]</sup>	Skin (rabbit): 15 mg/24h mild
	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>	
N-methyl-2-pyrrolidone	TOXICITY	IRRITATION
	dermal (rat) LD50: 2500-5000 mg/kg <sup>[2]</sup>	Eye (rabbit): 100 mg - moderate
	Inhalation (rat) LC50: 8290.5297 mg/l/4H <sup>[2]</sup>	
Oral (rat) LD50: 3914 mg/kg <sup>[2]</sup>		

**Legend:**

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

<b>PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER</b>	A BASF report (in ECETOC ) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. *Shin-Etsu SDS
<b>XYLENE</b>	Reproductive effector in rats The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans.

## RESENE UNIVERSAL FLATTING BINDER

	Evidence of carcinogenicity may be inadequate or limited in animal testing.
<b>ETHYLBENZENE</b>	Liver changes, uterine 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. <b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
<b>N-METHYL-2-PYRROLIDONE</b>	for N-methyl-2-pyrrolidone (NMP): <b>Acute toxicity:</b> In rats, NMP is absorbed rapidly after inhalation, oral, and dermal administration, distributed throughout the organism, and eliminated mainly by hydroxylation to polar compounds, which are excreted via urine.
<b>RESENE UNIVERSAL FLATTING BINDER &amp; N-METHYL-2-PYRROLIDONE</b>	Asthma-like symptoms may continue for months or even years after exposure to the material ceases.
<b>RESENE UNIVERSAL FLATTING BINDER &amp; PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER</b>	for propylene glycol ethers (PGEs): Typical propylene glycol ethers include propylene glycol n-butyl ether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA); tripropylene glycol methyl ether (TPM). Testing of a wide variety of propylene glycol ethers Testing of a wide variety of propylene glycol ethers has shown that propylene glycol-based ethers are less toxic than some ethers of the ethylene series. A BASF report (in ECETOC ) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer.
<b>XYLENE &amp; ETHYLBENZENE</b>	The material may produce severe irritation to the eye causing pronounced inflammation. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic).

<b>Acute Toxicity</b>	✗	<b>Carcinogenicity</b>	✓
<b>Skin Irritation/Corrosion</b>	✓	<b>Reproductivity</b>	✓
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	✓
<b>Respiratory or Skin sensitisation</b>	✗	<b>STOT - Repeated Exposure</b>	✓
<b>Mutagenicity</b>	✗	<b>Aspiration Hazard</b>	✗

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

## SECTION 12 ECOLOGICAL INFORMATION

## Toxicity

RESENE UNIVERSAL FLATTING BINDER	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
propylene glycol monomethyl ether acetate, alpha-isomer	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	100mg/L	1
	EC50	48	Crustacea	373mg/L	2
	EC50	72	Algae or other aquatic plants	>1-mg/L	2
xylene	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	2.6mg/L	2
	EC50	48	Crustacea	1.8mg/L	2
	EC50	72	Algae or other aquatic plants	3.2mg/L	2
ethylbenzene	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.0043mg/L	4
	EC50	48	Crustacea	1.184mg/L	4
	EC50	96	Algae or other aquatic plants	3.6mg/L	4
N-methyl-2-pyrrolidone	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	464mg/L	1
	EC50	48	Crustacea	ca.4897mg/L	1
	EC50	72	Algae or other aquatic plants	>500mg/L	2
	EC0	24	Crustacea	>1-mg/L	2
NOEC	504	Crustacea	12.5mg/L	2	

**Legend:** 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data



## RESENE UNIVERSAL FLATTING BINDER

Harmful to aquatic organisms, 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 propylene glycol ethers:

**Environmental fate:**

Most are liquids at room temperature and all are water-soluble.

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

For n-heptane:

log Kow : 4.66

Koc : 2400-8100

Half-life (hr) air : 52.8

Half-life (hr) H<sub>2</sub>O surface water : 2.9-312

Henry's atm m<sup>3</sup> /mol: 2.06

BOD 5 if unstated: 1.92

COD : 0.06

BCF : 340-2000

log BCF : 2.53-3.31

**Environmental fate:**

Photolysis or hydrolysis of n-heptane are not expected to be important environmental fate processes.

For xylenes :

log Koc : 2.05-3.08

Koc : 25.4-204

Half-life (hr) air : 0.24-42

Half-life (hr) H<sub>2</sub>O surface water : 24-672

Half-life (hr) H<sub>2</sub>O ground : 336-8640

Half-life (hr) soil : 52-672

Henry's Pa m<sup>3</sup> /mol: 637-879

Henry's atm m<sup>3</sup> /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 glycol ethers:

**Environmental fate:**

Ether groups are generally stable to hydrolysis in water under neutral conditions and ambient temperatures.

**DO NOT discharge into sewer or waterways.**

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
propylene glycol monomethyl ether acetate, alpha-isomer	LOW	LOW
xylene	HIGH (Half-life = 360 days)	LOW (Half-life = 1.83 days)
ethylbenzene	HIGH (Half-life = 228 days)	LOW (Half-life = 3.57 days)
N-methyl-2-pyrrolidone	LOW	LOW

### Bioaccumulative potential

Ingredient	Bioaccumulation
propylene glycol monomethyl ether acetate, alpha-isomer	LOW (LogKOW = 0.56)
xylene	MEDIUM (BCF = 740)
ethylbenzene	LOW (BCF = 79.43)
N-methyl-2-pyrrolidone	LOW (BCF = 0.16)

### Mobility in soil

Ingredient	Mobility
propylene glycol monomethyl ether acetate, alpha-isomer	HIGH (KOC = 1.838)
ethylbenzene	LOW (KOC = 517.8)
N-methyl-2-pyrrolidone	LOW (KOC = 20.94)

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>Legislation addressing waste disposal requirements may differ by country, state and/ or territory.</li> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ Recycle wherever possible.</li> </ul>
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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

Continued...

## RESENE UNIVERSAL FLATTING BINDER

package.

## SECTION 14 TRANSPORT INFORMATION

## Labels Required

	
Marine Pollutant	NO
HAZCHEM	*3Y

## 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	III
Environmental hazard	Not Applicable
Special precautions for user	Special provisions : 163; 223; 367 Limited quantity : 5 L

## Air transport (ICAO-IATA / DGR)

UN number	1263
UN proper shipping name	Paint (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base); Paint related material (including paint thinning or reducing compounds)
Transport hazard class(es)	ICAO/IATA Class : 3 ICAO / IATA Subrisk : Not Applicable ERG Code : 3L
Packing group	III
Environmental hazard	Not Applicable
Special precautions for user	Special provisions : A3 A72 A192 Cargo Only Packing Instructions : 366 Cargo Only Maximum Qty / Pack : 220 L Passenger and Cargo Packing Instructions : 355 Passenger and Cargo Maximum Qty / Pack : 60 L Passenger and Cargo Limited Quantity Packing Instructions : Y344 Passenger and Cargo Limited Maximum Qty / Pack : 10 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 : 3 IMDG Subrisk : Not Applicable
Packing group	III
Environmental hazard	Not Applicable
Special precautions for user	EMS Number : F-E , S-E Special provisions : 163 223 367 955 Limited Quantities : 5 L

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

Not Applicable

## SECTION 15 REGULATORY INFORMATION

Continued...

## RESENE UNIVERSAL FLATTING BINDER

**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

**PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER IS FOUND ON THE FOLLOWING REGULATORY LISTS**

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals  
 New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data  
 New Zealand Inventory of Chemicals (NZIoC)

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

**ETHYLBENZENE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Chemical Footprint Project - Chemicals of High Concern List  
 International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs  
 International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B : Possibly carcinogenic to humans  
 New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals  
 New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data  
 New Zealand Inventory of Chemicals (NZIoC)  
 New Zealand Workplace Exposure Standards (WES)

**N-METHYL-2-PYRROLIDONE 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 Chemicals  
 New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data  
 New Zealand Inventory of Chemicals (NZIoC)  
 New Zealand Workplace Exposure Standards (WES)

**Hazardous Substance Location**

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

Hazard Class	Quantity beyond which controls apply for closed containers	Quantity beyond which controls apply when use occurring in open containers
3.1C	500 L in containers greater than 5 L 1500 L in containers up to and including 5 L	250 L 250 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

**Tracking Requirements**

Not Applicable

**National Inventory Status**

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No (propylene glycol monomethyl ether acetate, alpha-isomer; xylene; ethylbenzene; N-methyl-2-pyrrolidone)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes
<b>Legend:</b>	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)

**RESENE UNIVERSAL FLATTING BINDER****SECTION 16 OTHER INFORMATION**

<b>Revision Date</b>	05/03/2020
<b>Initial Date</b>	07/05/2015

**Other information**

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

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

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