MARINE SHIELD 200 LOW ODOUR CLEAR PART A

Version No: **1.1**
Safety Data Sheet according to HSNO Regulations

Issue Date: **28/08/2020**
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L.GHS.NZL.EN

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

Product Identifier

Product name	MARINE SHIELD LOW ODOUR 200 CLEAR PART A
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	10697

Details of the supplier of the safety data sheet

Registered company name	**MARINE SHIELD LIMITED**
Address	63 Hamprden Street, Picton 7220
Telephone	+64 29 243 9473
Fax	
Website	www.marineshield.co.nz
Email	info@marineshield.co.nz

Emergency telephone number

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

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, 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, Reproductive Toxicity Category 2, Skin Sensitizer Category 1, Aspiration Hazard Category 2, Carcinogenicity Category 2, Chronic Aquatic Hazard Category 3, 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, 6.1E (aspiration), 6.3B, 6.5A (respiratory), 6.5B (contact), 6.7B, 6.8B, 6.9B, 9.1C, 9.1D

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

H226	Flammable liquid and vapour.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H371	May cause damage to organs. (Respiratory system) (Oral, Inhalation)
H373	May cause damage to organs through prolonged or repeated exposure. (Respiratory system) (Inhalation)
H361	Suspected of damaging fertility or the unborn child.
H317	May cause an allergic skin reaction.
H305	May be harmful if swallowed and enters airways.
H351	Suspected of causing cancer.

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H412	Harmful to aquatic life with long lasting effects.
H316	Causes mild skin irritation.

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.
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.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P321	Specific treatment (see advice on this label).
P331	Do NOT induce vomiting.
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.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider.
P314	Get medical advice/attention if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
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.

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
119-61-9	0.1-0.5	benzophenone
4083-64-1	<1	p-toluenesulfonyl isocyanate
1330-20-7	1-5	xylene
Not Available	<2	benzotriazol derivatives
100-41-4	0.1-0.5	ethylbenzene
64742-48-9.	1-10	naphtha petroleum, heavy, hydrotreated
64742-49-0.	1-5	naphtha petroleum, light, hydrotreated
28182-81-2	10-30	hexamethylene diisocyanate polymer

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ 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.

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	▸ Seek medical attention without delay if pain persists or recurs. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	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.
Ingestion	▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus. ▸ 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 alcohol.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

▸ 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	▸ Liquid and vapour are flammable. Combustion products include: carbon dioxide (CO_2) carbon monoxide (CO) isocyanates hydrogen cyanide and minor amounts of nitrogen oxides (NOx) other pyrolysis products typical of burning organic material.

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	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.
Major Spills	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

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Safe handling	▸ Containers, even those that have been emptied, may contain explosive vapours. ▸ Electrostatic discharge may be generated during pumping - this may result in fire. ▸ Avoid unnecessary personal contact, including inhalation. ▸ **DO NOT** allow clothing wet with material to stay in contact with skin
Other information	▸ Store in original containers in approved flammable liquid storage area.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Packing as supplied by manufacturer.
Storage incompatibility	▸ strong oxidisers

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)	p-toluenesulfonyl isocyanate	Isocyanates, all, (as -NCO)	0.02 mg/m3	0.07 mg/m3	Not Available	dsen-Dermal sensitiser (rsen)-Respiratory sensitiser Note: These values apply to all isocyanates, including prepolymers, present in the workplace air as vapours, mist or dust.
New Zealand Workplace Exposure Standards (WES)	xylene	Dimethylbenzene	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)	naphtha petroleum, heavy, hydrotreated	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	om-Sampled by a method that does not collect vapour.
New Zealand Workplace Exposure Standards (WES)	hexamethylene diisocyanate polymer	Isocyanates, all, (as -NCO)	0.02 mg/m3	0.07 mg/m3	Not Available	dsen-Dermal sensitiser (rsen)-Respiratory sensitiser Note: These values apply to all isocyanates, including prepolymers, present in the workplace air as vapours, mist or dust.

Emergency Limits

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
benzophenone	Benzophenone	1.5 mg/m3	90 mg/m3	310 mg/m3
xylene	Xylenes	Not Available	Not Available	Not Available
ethylbenzene	Ethyl benzene	Not Available	Not Available	Not Available
naphtha petroleum, heavy, hydrotreated	Naphtha, hydrotreated heavy; (Isopar L-rev 2)	350 mg/m3	1,800 mg/m3	40,000 mg/m3
naphtha petroleum, light, hydrotreated	Naphtha (petroleum),hydrotreated light	1,000 mg/m3	11,000 mg/m3	66,000 mg/m3
hexamethylene diisocyanate polymer	Hexamethylene diisocyanate polymer	7.8 mg/m3	86 mg/m3	510 mg/m3

Ingredient	Original IDLH	Revised IDLH
benzophenone	Not Available	Not Available
p-toluenesulfonyl isocyanate	Not Available	Not Available
xylene	900 ppm	Not Available
ethylbenzene	800 ppm	Not Available
naphtha petroleum, heavy, hydrotreated	2,500 mg/m3	Not Available
naphtha petroleum, light, hydrotreated	Not Available	Not Available
hexamethylene diisocyanate polymer	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
benzophenone	E	≤ 0.01 mg/m³
naphtha petroleum, light, hydrotreated	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

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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 isocyanates:
Some jurisdictions require that health surveillance be conducted on occupationally exposed workers.
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 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.
NOTE H: Special requirements exist in relation to classification and labelling of this substance.
NOTE P: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 0.01% w/w benzene (EINECS No 200-753-7).

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	**NOTE:** ▸ The material may produce skin sensitisation in predisposed individuals. 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. ▸ Do NOT wear natural rubber (latex gloves). ▸ Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves. ▸ **DO NOT** use skin cream unless necessary and then use only minimum amount.
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

Respiratory protection required in insufficiently ventilated working areas and during spraying. An air-fed mask, or for short period of mask, a combination of charcoal filter and particulate filter is recommended.
In case of hypersensitivity of the respiratory tract and skin (e.g. asthmatics and those who suffer from chronic bronchitis and chronic skin complaint) it is inadvisable to work with the product.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Translucent liquid

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)**	345
pH (as supplied)	Not Available	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	70
Initial boiling point and boiling range (°C)	147	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	41	**Taste**	Not Available
Evaporation rate	0.96 Not Available	**Explosive properties**	Not Available
Flammability	Flammable.	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	9.8	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	1.0	**Volatile Component (%vol)**	51.4
Vapour pressure (kPa)	1.20	**Gas group**	Not Available
Solubility in water	Reacts	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	4.56	**VOC g/L**	453

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SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ stable.
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	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. Headache, fatigue, lassitude, irritability and gastrointestinal disturbances (e.g., nausea, anorexia and flatulence) are the most common symptoms of xylene overexposure.
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.
Skin Contact	Dermally, isoparaffins have produced slight to moderate irritation in animals and humans under occluded patch conditions where evaporation cannot freely occur. 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.
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. Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. 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. 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.

Marine Shield 200 Low Odour Part A	**TOXICITY** **NOT AVAILABLE**	**IRRITATION** **NOT AVAILABLE**

benzophenone	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 3535 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
	Oral (mouse) LD50: 2895 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]
	Oral (rat) LD50: >10,000 mg/kg[2]	
	Oral (rat) LD50: >10000 mg/kg[2]	

p-toluenesulfonyl isocyanate	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: 2600 mg/kg[2]	Not Available

xylene	**TOXICITY**	**IRRITATION**
	200 mg/kg[2]	Eye (human): 200 ppm irritant
	450 mg/kg[2]	Eye (rabbit): 5 mg/24h SEVERE
	50 mg/kg[2]	Eye (rabbit): 87 mg mild
	Dermal (rabbit) LD50: >1700 mg/kg[2]	Eye: adverse effect observed (irritating)[1]
	Inhalation (rat) LC50: 4994.295 mg/l/4h[2]	Skin (rabbit):500 mg/24h moderate
	Oral (mouse) LD50: 2119 mg/kg[2]	Skin: adverse effect observed (irritating)[1]
	Oral (rat) LD50: 3523-8700 mg/kg[2]	
	Oral (rat) LD50: 4300 mg/kg[2]	

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ethylbenzene	

TOXICITY	IRRITATION
100 mg/kg[2]	Eye (rabbit): 500 mg - SEVERE
4000 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
Dermal (rabbit) LD50: 17800 mg/kg[2]	Skin (rabbit): 15 mg/24h mild
Oral (rat) LD50: ~3523 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]
Oral (rat) LD50: 3500 mg/kg[2]	

naphtha petroleum, heavy, hydrotreated	

TOXICITY	IRRITATION
11400 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
Inhalation (rat) LC50: 8.5 mg/l/4H[2]	Skin: adverse effect observed (irritating)[1]
Oral (rat) LD50: >4500 mg/kg[1]	
Oral (rat) LD50: >5000 mg/kg[1]	

naphtha petroleum, light, hydrotreated	

TOXICITY	IRRITATION
Oral (rat) LD50: >4500 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
Oral (rat) LD50: >4800 mg/kg[1]	Skin: adverse effect observed (irritating)[1]
Oral (rat) LD50: >5000 mg/kg[1]	
Oral (rat) LD50: >5570 mg/kg[1]	
Oral (rat) LD50: >6000 mg/kg[1]	
Oral (rat) LD50: >7000 mg/kg[1]	

hexamethylene diisocyanate polymer	

TOXICITY	IRRITATION
Dermal (rabbit) LD50: >5000 mg/kg[2]	Skin (rabbit): 500 mg - moderate
Inhalation (rat) LC50: 390 mg/l/4h**[2]	
Inhalation (rat) LC50: 4.625 mg/l/1he[2]	

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*

BENZOPHENONE	A member or analogue of a group of of aromatic substituted secondary alcohols, ketones, and related esters generally regarded as safe (GRAS) based, in part, on their rapid absorption, metabolic detoxication, and excretion in humans and other animals; their low level of flavor use; the wide margins of safety between the conservative estimates of intake and the no-observed-adverse effect levels determined from subchronic and chronic studies and the lack of significant genotoxic and mutagenic potential. Acute rat oral LD50 values have been reported for 17 of the 38 agents in this group.
P-TOLUENESULFONYL ISOCYANATE	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: **NOT** 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. **NOTE:** 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.
NAPHTHA PETROLEUM, LIGHT, HYDROTREATED	For Low Boiling Point Naphthas (LBPNs): **Acute toxicity:** LBPNs generally have low acute toxicity by the oral (median lethal dose [LD50] in rats > 2000 mg/kg-bw), inhalation (LD50 in rats > 5000 mg/m3) and dermal (LD50 in rabbits > 2000 mg/kg-bw) routes of exposure Most LBPNs are mild to moderate eye and skin irritants in rabbits, with the exception of heavy catalytic cracked and heavy catalytic reformed naphthas, which have higher primary skin irritation indices. **Sensitisation:** LBPNs do not appear to be skin sensitizers, but a poor response in the positive control was also noted in these studies **Repeat dose toxicity:** The lowest-observed-adverse-effect concentration (LOAEC) and lowest-observed-adverse-effect level (LOAEL) values identified following short-term (2-89 days) and subchronic (greater than 90 days) exposure to the LBPN substances. The High Benzene Naphthas (HBNs) Category was developed for the HPV Program by grouping ethylene manufacturing streams (products) that exhibit commonalities from both manufacturing process and compositional perspectives. DHC Solvent Chemie (for EC No.: 926-605-8)
HEXAMETHYLENE DIISOCYANATE POLYMER	* Bayer SDS ** Ardex SDS No significant acute toxicological data identified in literature search. The material may produce moderate eye irritation leading to inflammation.

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MARINESHIELD LOW ODOUR CLEAR PART A & 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 wheezing, gasping and severe distress, even sudden loss of consciousness, and pulmonary oedema.
MARINESHIELD LOW ODOUR CLEAR PART A & BENZOPHENONE & 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.
MARINESHIELD LOW ODOUR CLEAR PART A & NAPHTHA PETROLEUM, HEAVY, HYDROTREATED & NAPHTHA PETROLEUM, LIGHT, HYDROTREATED	Studies indicate that normal, branched and cyclic paraffins are absorbed from the mammalian gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length,with little absorption above C30.
BENZOPHENONE & P-TOLUENESULFONYL ISOCYANATE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases.
BENZOPHENONE & ETHYLBENZENE	**WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
XYLENE & ETHYLBENZENE	The material may produce severe irritation to the eye causing pronounced inflammation.
XYLENE & ETHYLBENZENE & HEXAMETHYLENE DIISOCYANATE POLYMER	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic).
NAPHTHA PETROLEUM, HEAVY, HYDROTREATED & NAPHTHA PETROLEUM, LIGHT, HYDROTREATED	for petroleum: Altered mental state, drowsiness, peripheral motor neuropathy, irreversible brain damage (so-called Petrol Sniffer's Encephalopathy), delirium, seizures, and sudden death have been reported from repeated overexposure to some hydrocarbon solvents, naphthas, and gasoline This product may contain benzene which is known to cause acute myeloid leukaemia and n-hexane which has been shown to metabolize to compounds which are neuropathic. This product contains toluene.

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

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

SECTION 12 Ecological information

Toxicity

MARINE SHIELD LOW ODOUR CLEAR PART A

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

benzophenone

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96	Fish	>10mg/L	2
EC50	48	Crustacea	6.784mg/L	2
EC50	72	Algae or other aquatic plants	1.8mg/L	2
NOEC	504	Crustacea	0.2mg/L	2

p-toluenesulfonyl isocyanate

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96	Fish	>45mg/L	2
EC50	48	Crustacea	>100mg/L	2
EC50	72	Algae or other aquatic plants	25mg/L	2
NOEC	72	Algae or other aquatic plants	10mg/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
NOEC	73	Algae or other aquatic plants	0.44mg/L	2

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ethylbenzene

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96	Fish	2-560mg/L	2
EC50	48	Crustacea	=1.8-2.4mg/L	1
EC50	96	Algae or other aquatic plants	3.6mg/L	2
NOEC	168	Crustacea	0.96mg/L	5

naphtha petroleum, heavy, hydrotreated

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96	Fish	4.1mg/L	2
EC50	48	Crustacea	4.5mg/L	2
EC50	72	Algae or other aquatic plants	>1-mg/L	2
NOEL	72	Algae or other aquatic plants	0.1mg/L	2

naphtha petroleum, light, hydrotreated

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96	Fish	4.1mg/L	2
EC50	48	Crustacea	3mg/L	2
EC50	72	Algae or other aquatic plants	>1-mg/L	2
NOEL	72	Algae or other aquatic plants	0.1mg/L	2

hexamethylene diisocyanate polymer

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96	Fish	8.9mg/L	2
EC50	48	Crustacea	127mg/L	2
EC50	72	Algae or other aquatic plants	>1-mg/L	2
EC0	24	Crustacea	>=1-mg/L	2

Legend: *Extracted from 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*

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.
DO NOT discharge into sewer or waterways.

Persistence and degradability

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

Bioaccumulative potential

Ingredient	Bioaccumulation
benzophenone	LOW (BCF = 9.2)
p-toluenesulfonyl isocyanate	LOW (LogKOW = 2.3424)
xylene	MEDIUM (BCF = 740)
ethylbenzene	LOW (BCF = 79.43)
hexamethylene diisocyanate polymer	LOW (LogKOW = 7.5795)

Mobility in soil

Ingredient	Mobility
benzophenone	LOW (KOC = 1077)
p-toluenesulfonyl isocyanate	LOW (KOC = 882.1)
ethylbenzene	LOW (KOC = 517.8)
hexamethylene diisocyanate polymer	LOW (KOC = 18560000)

SECTION 13 Disposal considerations

Waste treatment methods

Continued...

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. Contact a Local Authority for the disposal information. Do not discharge the substance into the environment

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.
The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.
The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

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)
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

Continued...

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

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

benzophenone 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 Approved Hazardous Substances with controls
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)

p-toluenesulfonyl isocyanate is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls
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)

xylene is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
New Zealand Approved Hazardous Substances with controls
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 Approved Hazardous Substances with controls
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)

naphtha petroleum, heavy, hydrotreated 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
New Zealand Approved Hazardous Substances with controls
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
New Zealand Inventory of Chemicals (NZIoC)
New Zealand Workplace Exposure Standards (WES)

naphtha petroleum, light, hydrotreated 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
New Zealand Inventory of Chemicals (NZIoC)

hexamethylene diisocyanate polymer is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls
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 (Closed Containers)	Quantity (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.

Continued...

Class of substance	Quantities
Not Applicable	Not Applicable

Continued...

Refer Group Standards for further information

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC	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	28/08/2020
Initial Date	28/08/2020

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.

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
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

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end of SDS