MARINE AND INDUSTRIAL COATINGS SINCE 1908

SAFETY DATA SHEET

500/P101 2 PACK HIGH PERFORMANCE TOPCOAT COLOURS - HARDENER

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

1.1. Product identifier

Product name 500/P101 2 PACK HIGH PERFORMANCE TOPCOAT COLOURS - HARDENER

Product number 500/P101/ COLOURS - HARDENER

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses HARDENER FOR TWO COMPONENT MARINE TOPCOAT

1.3. Details of the supplier of the safety data sheet

Supplier

TEAL & MACKRILL LIMITED
LOCKWOOD STREET
HULL
HU2 0HN

+44(0)1482 320194(T)
+44(0)1482 219266(F)
info@teamac.co.uk

Contact person Technical Department -, as above, 08.30 - 16.30 hrs Mon - Thurs, 08.30 - 15.00 hrs Fri

1.4. Emergency telephone number

Emergency telephone +44 (0) 1482 320194 Teamac (08.30 - 16.30 hrs Mon - Thurs, 08.30 - 15.00 hrs Fri)

SDS No. 10973

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Flam. Liq. 3 - H226

Health hazards Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 STOT SE 3 - H335 STOT RE 2 - H373

Environmental hazards Not Classified

2.2. Label elements

Pictogram

Signal word Warning

500/P101 2 PACK HIGH PERFORMANCE TOPCOAT COLOURS - HARDENER

Hazard statements

H226 Flammable liquid and vapour.
H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P102 Keep out of reach of children.
P101 If medical advice is needed, have product container or label at hand.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing vapour/ spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container in accordance with national regulations.

Supplemental label information

EUH204 Contains isocyanates. May produce an allergic reaction.

Contains

HEXAMETHYLENE-1,6-DIISOCYANATE HOMOPOLYMER, XYLENE ISOMER MIXTURE, HEXAMETHYLENE-DI-ISOCYANATE

Supplementary precautionary statements

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P370+P378 In case of fire: Use alcohol resistant foam, carbon dioxide or dry powder to extinguish.
P403+P235 Store in a well-ventilated place. Keep cool.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

HEXAMETHYLENE-1,6-DIISOCYANATE HOMOPOLYMER **60-100%**

CAS number: 28182-81-2

Classification
Acute Tox. 4 - H332
Skin Sens. 1 - H317
STOT SE 3 - H335

Classification (67/548/EEC or 1999/45/EC)
Xn;R20. Xi;R37. R43.

2-METHOXY-1-METHYLETHYL ACETATE **10-30%**

CAS number: 108-65-6 EC number: 203-603-9 REACH registration number: 01-2119475791-29-xxxx

Classification
Flam. Liq. 3 - H226
STOT SE 3 - H336

Classification (67/548/EEC or 1999/45/EC)
R10

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XYLENE ISOMER MIXTURE		10-30%
CAS number: 1330-20-7	EC number: 215-535-7	REACH registration number: 01-2119488216-32-0000

Classification	Classification (67/548/EEC or 1999/45/EC)
Flam. Liq. 3 - H226 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335 STOT RE 2 - H373 Asp. Tox. 1 - H304 Aquatic Chronic 3 - H412	R10 Xn;R20/21 Xi;R38

HEXAMETHYLENE-DI-ISOCYANATE		<1%
CAS number: 822-06-0	EC number: 212-485-8	REACH registration number: 01-2119457571-37-0000

Classification	Classification (67/548/EEC or 1999/45/EC)
Resp. Sens. 1 - H334 Skin Sens. 1 - H317	T;R23 R42/43 Xi;R36/37/38

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Inhalation Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

Ingestion Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Skin contact It is important to remove the substance from the skin immediately. In the event of any sensitisation symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognised skin cleansing agent. Get medical attention if symptoms are severe or persist after washing.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.

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Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

4.2. Most important symptoms and effects, both acute and delayed

General information See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation A single exposure may cause the following adverse effects: Headache. Exhaustion and weakness. During application and drying, solvent vapours will be emitted. Vapours in high concentrations are narcotic.

Ingestion May cause sensitisation or allergic reactions in sensitive individuals. Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin. Discoloration of the skin.

Eye contact May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media The product is flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up. Flammable liquid and vapour. Vapours may be ignited by a spark, a hot surface or an ember. Vapours may form explosive mixtures with air. Fire-water run-off in sewers may create fire or explosion hazard. This product is toxic.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Evacuate area. Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage. Promptly remove any clothing that becomes contaminated. Avoid inhalation of dust and vapours. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Eliminate all ignition sources if safe to do so. No smoking, sparks, flames or other sources of ignition near spillage. Do not allow material to enter confined spaces, due to the risk of explosion. Provide adequate ventilation. Absorb small quantities with paper towels and evaporate in a safe place. Once evaporation is complete, place paper in a suitable waste disposal container and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. The product is flammable. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. In use may form flammable/explosive vapour-air mixture. Vapours may accumulate on the floor and in low-lying areas. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

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Storage precautions Eliminate all sources of ignition. Take precautionary measures against static discharges. Earth container and transfer equipment to eliminate sparks from static electricity. Keep away from oxidising materials, heat and flames. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class Flammable liquid storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

HEXAMETHYLENE-1,6-DIISOCYANATE HOMOPOLYMER

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³
Short-term exposure limit (15-minute): WEL 0.07 mg/m³
as NCO

2-METHOXY-1-METHYLETHYL ACETATE

Long-term exposure limit (8-hour TWA): WEL 50 ppm 274 mg/m³
Short-term exposure limit (15-minute): WEL 100 ppm 548 mg/m³
Sk

XYLENE ISOMER MIXTURE

Long-term exposure limit (8-hour TWA): WEL 50 ppm 220 mg/m³
Short-term exposure limit (15-minute): WEL 100 ppm 441 mg/m³
Sk

HEXAMETHYLENE-DI-ISOCYANATE

Long-term exposure limit (8-hour TWA): WEL 0,02 mg/m³
Sen
Short-term exposure limit (15-minute): WEL 0,07 mg/m³
as NCO

WEL = Workplace Exposure Limit
Sen = Capable of causing occupational asthma.
Sk = Can be absorbed through the skin.

2-METHOXY-1-METHYLETHYL ACETATE (CAS: 108-65-6)

DNEL
Workers - Inhalation; Long term systemic effects: 275 mg/m³
Workers - Dermal; Long term systemic effects: 796 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 33 mg/m³
Consumer - Dermal; Long term systemic effects: 320 mg/kg/day
Consumer - Oral; Long term systemic effects: 36 mg/kg/day

PNEC
- STP; 100 mg/l
- Fresh water; 0.635 mg/l
- Soil; 0.29 mg/kg
- Sediment; 3.29 mg/kg
- marine water; 0.0635 mg/l
- Sediment (Marinewater); 0.329 mg/kg
- Intermittent release; 6.35 mg/l

XYLENE ISOMER MIXTURE (CAS: 1330-20-7)

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DNEL

Consumer - Oral; Long term systemic effects: 12.5 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 65.3 mg/m³
Consumer - Inhalation; Short term systemic effects: 260 mg/m³
Consumer - Inhalation; Short term local effects: 260 mg/m³
Consumer - Dermal; Long term systemic effects: 125 mg/kg/day
Workers - Inhalation; Short term systemic effects: 442 mg/m³
Workers - Inhalation; Long term systemic effects: 221 mg/m³
Workers - Inhalation; Long term local effects: 221 mg/kg/day
Workers - Inhalation; Short term local effects: 442 mg/m³

PNEC

- Fresh water; 0.327 mg/l
- marine water; 0.327 mg/l
- Intermittent release; 0.327 mg/l
- STP; 6.58 mg/l
- Sediment (Freshwater); 12.46 mg/kg
- Sediment (Marinewater); 12.46 mg/kg
- Soil; 2.31 mg/kg

8.2. Exposure controls

Protective equipment

Appropriate engineering controls

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection

To protect hands from chemicals, gloves should comply with European Standards EN388 and 374. As a general principle, exposure should be managed by means other than the provision of protective gloves. Manufacturer's performance data suggest that the optimum glove for use should be: Wear protective gloves made of the following material: Viton rubber (fluoro rubber). Thickness: ≥ 0.7 mm or Polyvinyl alcohol (PVA). Thickness: ≥ 0.2 - 0.3 mm or Polyethylene. Thickness: ≥ 0.062 mm Permeation breakthrough time according to EN374 - class: (1-6) e.g. minimum 480 mins. Caution: The performance of gloves under actual working conditions can be significantly affected by many factors and the information provided according to EN374 may not accord with what is achieved in practice. We recommend that expert professional advice is sought that takes into account of the work processes and working environment applicable for each task where gloves are to be worn.

Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

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Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.
Respiratory protection	Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. In case of inadequate ventilation use suitable respirator. It is recommended to use respiratory equipment with combination filter, type A2/P2.
Environmental exposure controls	Keep container tightly sealed when not in use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid
Colour	Yellowish
Odour	Characteristic. Organic solvents.
Odour threshold	Not determined.
pH	Technically not feasible.
Melting point	Not determined.
Initial boiling point and range	145°C @ 760 mm Hg
Flash point	38 approx.°C Closed cup.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Flammability (solid, gas)	Not determined.
Upper/lower flammability or explosive limits	: Xylene = 1% - 1-methoxypropylacetate-2= 1.5%
Other flammability	Not determined.
Vapour pressure	Xylene ca. 7-9 @ 20°C Hexamethylene-1,6-diisocyanate 0.014 @ 25°C Resin <0.001 @ 20°C (Vapour Pressure: balance/OECD No. 104) mbar @ °C
Vapour density	heavier than air
Relative density	1.06 - 1.08 @ @ 20 C°C
Solubility(ies)	Insoluble in water Hardens in contact with water.
Partition coefficient	Not determined.
Auto-ignition temperature	460 (DIN 51794)°C
Decomposition Temperature	Not determined.
Viscosity	ca. 225 mPa.s @ 23 C DIN EN ISO 3219/A.3 - ca. 59 s 4mm flow cup to DIN 53211 @ °C
Explosive properties	Not determined.
Explosive under the influence of a flame	Not considered to be explosive.

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Oxidising properties Not determined.

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions The following materials may react strongly with the product: Oxidising agents.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition. Containers can burst violently or explode when heated, due to excessive pressure build-up. Static electricity and formation of sparks must be prevented. Do not pressurise, cut, weld, drill, grind or otherwise expose containers to heat or sources of ignition.

10.5. Incompatible materials

Materials to avoid Oxidising materials. Acids - oxidising.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects No indication of mutagenic effects. Aromatic hydrocarbons, such as xylene, irritate the skin and mucous membranes and are narcotic if inhaled in high concentrations.

Acute toxicity - dermal

ATE dermal (mg/kg) 8,800.0

Acute toxicity - inhalation

Notes (inhalation LC_{50}) Acute Tox. 4 - H332 Harmful if inhaled.

ATE inhalation (gases ppm) 4,573.38

ATE inhalation (vapours mg/l) 22.41

ATE inhalation (dusts/mists mg/l) 1.02

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Irritation of eyes is assumed.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

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Skin sensitisation May cause skin sensitisation or allergic reactions in sensitive individuals.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 3 - H335 May cause respiratory irritation.

Target organs Respiratory system, lungs

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Prolonged or repeated exposure may cause the following adverse effects: High concentrations may cause severe lung damage.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

General information The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation A single exposure may cause the following adverse effects: Headache. Exhaustion and weakness. During application and drying, solvent vapours will be emitted. Vapours in high concentrations are narcotic.

Ingestion May cause sensitisation or allergic reactions in sensitive individuals. Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin. Discoloration of the skin.

Eye contact May cause temporary eye irritation.

Acute and chronic health hazards Over exposure, especially during spraying without the necessary precautions, entails risk of concentration- dependant irritating effects on eyes, nose, throat and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficulty breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations below UK Workplace Exposure Limits (WEL). Prolonged contact with skin may have tanning and irritating effects.

Route of exposure Ingestion Inhalation Skin and/or eye contact

Target organs Respiratory system, lungs

Medical considerations Skin disorders and allergies.

Toxicological information on ingredients.

HEXAMETHYLENE-1,6-DIISOCYANATE HOMOPOLYMER

Acute toxicity - oral

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Acute toxicity oral (LD_{50} mg/kg)	5,100.0
Species	Rat
ATE oral (mg/kg)	5,100.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	2,100.0
Species	Rabbit
ATE dermal (mg/kg)	2,100.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} dust/mist mg/l)	0.554
Species	Rat
ATE inhalation (dusts/mists mg/l)	1.5

Skin corrosion/irritation

Animal data	Slightly irritating.

Skin sensitisation

Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro	This substance has no evidence of mutagenic properties.

Inhalation	Irritating to respiratory system.

2-METHOXY-1-METHYLETHYL ACETATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	8,532.0
Species	Rat
ATE oral (mg/kg)	8,532.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	5,000.0
Species	Rabbit
ATE dermal (mg/kg)	5,000.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	35.7
Species	Rat

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ATE inhalation (vapours mg/l)	35.7

Skin corrosion/irritation

Animal data	Not irritating.

Skin sensitisation

Skin sensitisation	Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro	This substance has no evidence of mutagenic properties.

Specific target organ toxicity - single exposure

STOT - single exposure	Emits vapours if heated. Vapours/aerosol spray may irritate the respiratory system.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	Emits vapours, especially if heated.

XYLENE ISOMER MIXTURE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	3,523.0
Species	Rat
ATE oral (mg/kg)	3,523.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	12,126.0
Species	Rabbit
ATE dermal (mg/kg)	1,100.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} gases ppmV)	6,700.0
Species	Rat
Acute toxicity inhalation (LC_{50} vapours mg/l)	27.124
Species	Rat
Acute toxicity inhalation (LC_{50} dust/mist mg/l)	1.5
Species	Rat
ATE inhalation (vapours mg/l)	11.0

Serious eye damage/irritation

Serious eye damage/irritation	Severely irritating to skin. Irritation of eyes is assumed. No testing is needed.

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Respiratory sensitisation

Respiratory sensitisation Not sensitising.

Skin sensitisation

Skin sensitisation Not sensitising.

Carcinogenicity

Carcinogenicity There is no evidence that the product can cause cancer.

IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.

Reproductive toxicity

Reproductive toxicity - fertility This substance has no evidence of toxicity to reproduction.

Aspiration hazard

Aspiration hazard Kinematic viscosity <= 20.5 mm2/s.

Inhalation Harmful by inhalation.

Ingestion Pneumonia may be the result if vomited material containing solvents reaches the lungs.

Skin contact Harmful in contact with skin.

Target organs Central nervous system Liver

HEXAMETHYLENE-DI-ISOCYANATE

Respiratory sensitisation

Respiratory sensitisation Guinea pig: There is evidence that the material can lead to respiratory hypersensitivity.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Ames test: Negative.

Carcinogenicity

Carcinogenicity No evidence of carcinogenicity in animal studies

Reproductive toxicity

Reproductive toxicity - fertility Fertility: - Dose level: 0 - 0.005 - 0.050 - 0.300 ppm, Inhalation, Rat P This substance has no evidence of toxicity to reproduction.

Reproductive toxicity - development Teratogenicity: - Dose level:: 0 - 0.005 - 0.050 - 0.300 ppm, Inhalation, Rat This substance has no evidence of toxicity to reproduction.

Specific target organ toxicity - single exposure

STOT - single exposure Respiratory irritant effects that impair function with symptoms such as cough, pain, choking, and breathing difficulties.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

500/P101 2 PACK HIGH PERFORMANCE TOPCOAT COLOURS - HARDENER

Aspiration hazard

Aspiration hazard	Based on available data the classification criteria are not met.
Inhalation	May cause sensitisation by inhalation.
Skin contact	May cause sensitisation by skin contact.
Acute and chronic health hazards	The product contains small quantities of isocyanate. May cause respiratory allergy. May cause respiratory system irritation.

SECTION 12: Ecological information

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

Ecological information on ingredients.

2-METHOXY-1-METHYLETHYL ACETATE

Ecotoxicity The product is not expected to be hazardous to the environment.

XYLENE ISOMER MIXTURE

Ecotoxicity The product is not expected to be hazardous to the environment.

12.1. Toxicity

Toxicity Based on available data the classification criteria are not met.

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: LC(0) =8.8. LC(100)=25.0 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 100-1000 mg/l, Daphnia magna

Ecological information on ingredients.

HEXAMETHYLENE-1,6-DIISOCYANATE HOMOPOLYMER

Acute aquatic toxicity

Acute toxicity - fish	LC50, > 96 hours: 100 mg/l, Brachydanio rerio (Zebra Fish)
Acute toxicity - aquatic invertebrates	EC_{50}, > 48 hours: 100 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC_{50}, > 72 hours: 100 mg/l, Scenedesmus subspicatus
Acute toxicity - microorganisms	EC_{50}, > 3 hours: 100 mg/l, Activated sludge

2-METHOXY-1-METHYLETHYL ACETATE

Acute aquatic toxicity

Acute toxicity - fish	LC_{80}, > 96 hours: 134 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	LC_{80}, 48 hours: > 500 mg/l, Daphnia magna EC_{50}, 21 days: > 100 mg/l, Daphnia magna NOEC, 21 days: > 100 mg/l, Daphnia magna

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Acute toxicity - aquatic plants	EC_{50}, > 72 hours: 1000 mg/l, Scenedesmus subspicatus NOEC, 72 hours: > 1000 mg/l, Selenastrum capricornutum

XYLENE ISOMER MIXTURE

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: 2.6 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 3.62 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC_{50}, 72 hours: 3.2 mg/l, Algae

12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

Ecological information on ingredients.

HEXAMETHYLENE-1,6-DIISOCYANATE HOMOPOLYMER

Persistence and degradability	The product is not readily biodegradable.
Biodegradation	Degradation (%) - 1%: 28 days

2-METHOXY-1-METHYLETHYL ACETATE

Persistence and degradability	The product is readily biodegradable.
Biodegradation	- Degradation 100% (DOC): 28 days

XYLENE ISOMER MIXTURE

Persistence and degradability	The product is readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not determined.

Ecological information on ingredients.

2-METHOXY-1-METHYLETHYL ACETATE

Partition coefficient	log Kow: 1.2 log Pow: 0.43

XYLENE ISOMER MIXTURE

Partition coefficient	log Kow: 3.12 - 3.2

12.4. Mobility in soil

Mobility Volatile liquid. The product contains organic solvents which will evaporate easily from all surfaces.

12.5. Results of PBT and vPvB assessment

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Ecological information on ingredients.

2-METHOXY-1-METHYLETHYL ACETATE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

XYLENE ISOMER MIXTURE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible. Vapour from residual product may create a highly flammable or explosive atmosphere inside the container. Containers should be thoroughly emptied before disposal because of the risk of an explosion. Do not cut or weld used containers unless they have been thoroughly cleaned internally.

Waste class When this coating, in its liquid state, as supplied, becomes a waste, it is categorised as hazardous waste, with code 08 01 11* (SOLVENT BASED LIQUID WASTE). Part-used containers, not drained and/or rigorously scraped out and containing dried residues of the supplied coating, are categorised as hazardous waste, with code 08 01 11* (SOLVENT BASED LIQUID WASTE). Used containers, drained and/or rigorously scraped out and containing dry residues of the supplied coating, are categorised as non-hazardous waste, with code 15 01 02 (plastic packaging) or 15 01 04 (metal packaging). If mixed with other wastes, the above waste code may not be applicable. Neutralised empty packages, are categorised as non-hazardous waste, with code 15 01 02(plastic packaging) or 15 01 04 (metal packaging)

SECTION 14: Transport information

General This product is packed in accordance with the Limited Quantity Provisions of CDGCPL2, ADR and IMDG.

14.1. UN number

UN No. (ADR/RID) 1866

UN No. (IMDG) 1866

UN No. (ICAO) 1866

14.2. UN proper shipping name

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Proper shipping name (ADR/RID)	RESIN SOLUTION, FLAMMABLE
Proper shipping name (IMDG)	RESIN SOLUTION, FLAMMABLE
Proper shipping name (ICAO)	RESIN SOLUTION, FLAMMABLE

14.3. Transport hazard class(es)

ADR/RID class	1866
IMDG class	1866
ICAO class/division	1866

14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

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

EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

500/P101 2 PACK HIGH PERFORMANCE TOPCOAT COLOURS - HARDENER

Abbreviations and acronyms used in the safety data sheet

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
IATA: International Air Transport Association.
ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
IMDG: International Maritime Dangerous Goods.
CAS: Chemical Abstracts Service.
ATE: Acute Toxicity Estimate.
LC_{50}: Lethal Concentration to 50 % of a test population.
LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose).
EC_{50}: 50% of maximal Effective Concentration.
PBT: Persistent, Bioaccumulative and Toxic substance.
vPvB: Very Persistent and Very Bioaccumulative.

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
Aquatic Acute = Hazardous to the aquatic environment (acute)
Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Asp. Tox. = Aspiration hazard
Eye Dam. = Serious eye damage
Eye Irrit. = Eye irritation
Flam. Liq. = Flammable liquid
Resp. Sens. = Respiratory sensitisation
Skin Corr. = Skin corrosion
Skin Irrit. = Skin irritation
Skin Sens. = Skin sensitisation
STOT RE = Specific target organ toxicity-repeated exposure
STOT SE = Specific target organ toxicity-single exposure

Revision comments

Issued in new format for Reach compliance in accordance with EC 1272/2008 Issued in accordance with Annex II to REACH, as amended by Commission Regulation (EU) No. 2015/830 Revision to sections 2, 8, 11 & 12 for reclassification of solvents. Revisions to Sections (2),(3),(8),(15), and (16) - re-classification of resin components.

Issued by

Technical Dept. (P.E.)

Revision date

17/01/2019

Revision

7.0

Supersedes date

18/10/2016

SDS number

10973

SDS status

Approved.

500/P101 2 PACK HIGH PERFORMANCE TOPCOAT COLOURS - HARDENER

Hazard statements in full

H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs (Respiratory system, lungs) through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Signature

Initials _____