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Edition: 1

Product: Raxon Uni Hardener Medium

Reference: RAX0661

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SAFETY DATA SHEET

Done According to the Regulation (EC) 1907/2006.

1. IDENTIFICATION OF THE PREPARATION AND COMPANY

Company Name: Yellow Pearl Ltd,
Unit 17 Mullaghboy Industrial Estate,
Navan, Co Meath,
Ireland.

Telephone: 046 909 3800

Fax: 046

Emergency Telephone: 046 909 3800 (Office Hours)

Telephone: 00 353 (0) 46 909 3800

Fax: 00 353 (0) 46 909 3731

Emergency Telephone: 00 353 (0) 46 909 3800

Email: info@raxon.eu

Product Name: Raxon Uni Hardener Medium

Product Code: RAX0661

Intended Use: Hardener for paintings and/or varnishes

2. HAZARDS IDENTIFICATION

Harmful. Dangerous for the environment.

Respiratory exposure to the product may cause acute irritation and/or sensitisation of the respiratory system.

Product is flammable because of its composition in solvents.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances with risk for the health according with the Hazardous Substances Regulations (Directive 67/548/EEC) and its adaptations and/or changes:

Name: hexamethylene-di-isocyanate

Einecs Nr.: 212-485-8

Index Annex I: 615-011-00-1

R-Phrases*: R23 R36/37/38 R42/43

Cas Nr:

822-06-0

Conc. range:

< 1 %

Symbol:

T

Name: ethylbenzene

Einecs Nr.: 202-849-4

Index Annex I: 601-023-00-4

R-Phrases*: R20 R11

Cas Nr:

100-41-4

Conc. range:

1.0 - 2.5 %

Symbol:

F, Xn



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Name: propylbenzene

Einecs Nr.:	203-132-9	Cas Nr:	103-65-1
Index Annex I:	601-024-00-X	Conc. range:	1.0 - 2.5 %
R-Phrases*:	R65 R37 R51/53 R10	Symbol:	Xn, N

Name: mesitylene

Einecs Nr.:	203-604-4	Cas Nr:	108-67-8
Index Annex I:	601-025-00-5	Conc. range:	2.5 - 10 %
R-Phrases*:	R37 R51/53 R10	Symbol:	Xi, N

Name: xylene

Einecs Nr.:	215-535-7	Cas Nr:	1330-20-7
Index Annex I:	601-022-00-9	Conc. range:	2.5 - 10 %
R-Phrases*:	R20/21 R38 R10	Symbol:	Xn

Name: 1,2,4-trimethylbenzene

Einecs Nr.:	202-436-9	Cas Nr:	95-63-6
Index Annex I:	601-043-00-3	Conc. range:	2.5 - 10 %
R-Phrases*:	R20 R36/37/38 R51/53 R10	Symbol:	Xn, N

Name: Solvent naphtha (petroleum), light arom.

Einecs Nr.:	265-199-0	Cas Nr:	64742-95-6
Index Annex I:	649-356-00-4	Conc. range:	10 - 25 %
R-Phrases*:	R65 R37 R51/53 R10	Symbol:	Xn, N

Name: 2-methoxy-1-methylethyl acetate

Einecs Nr.:	203-603-9	Cas Nr:	108-65-6
Index Annex I:	607-195-00-7	Conc. range:	25 - 50 %
R-Phrases*:	R36 R10	Symbol:	Xi

*For full text see section 16.

Other information: Regarding the naphthas used in the product, it does not need to be classified nor labelled as carcinogenic (R45), taking into consideration the P remark of its classification, as the Benzene is < 0,1%.

4. FIRST AID MEASURES

General:

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation:

Remove to fresh air, keep the patient warm and rest. If breathing is irregular or stopped, administer artificial respiration. Give nothing by mouth. If unconscious, place in the recovery position and seek medical advice.

Eye contact:

Contact lenses should be removed. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart, and seek medical advice.

Skin contact:

Remove contaminated cloth. Wash skin thoroughly with soap and water or use a proprietary skin cleaner. Do NOT use solvents or thinners.

Ingestion:

If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.



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5. FIRE FIGHTING MEASURES.

Extinguishing media:

Recommended: alcohol resistant foam, CO₂, powder, water spray/mist.
not to be used: water jet.

Recommendations:

Fire will produce dense black smoke containing hazardous substances of combustion. Exposure to decomposition products may be a hazard to health. Appropriate self-contained breathing equipment may be required. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

Exclude sources of ignition and ventilate the area. Exclude non-essential personnel. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8. Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in a suitable container. The contaminated area should be cleaned up immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises: water (45 parts by volume) / ethanol or isopropanol (50 parts) / concentrated (d:0.880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) / water (95 parts). Add the same decontaminant to any residues and allow to stand for several days in a non-sealed container until no further reaction occurs. Once this stage is reached, close the container and dispose in accordance with the local waste regulations (see Section 13). Do not allow to enter drains or water courses.

If the product enters drains or sewers the local water company should be contacted immediately; in the case of contamination of streams, rivers or lakes, the National Rivers Authority.

7. HANDLING AND STORAGE

Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in processes in which this product is used.

Handling

Vapours are heavier than air and may spread along floors. They may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the work exposure limits.

The product may charge electrostatic. Use grounding leads when transferring from one container to another. Operators should wear anti-static footwear and clothing and floors should be electrically conductive.

Keep the container tightly closed. Precautions should be taken to minimise exposure to atmospheric humidity or water as carbon dioxide may be formed which, in closed containers, can result in pressurisation. Care should be taken when re-opening partly used containers. Exclude sources of heat, ignition and open flame.

Non-sparking tools should be used.

Avoid skin and eye contact. Avoid inhalation of vapour and spray mist.

For personal protection, see Section 8.

Never use pressure to empty: the container is not resistant to pressure.

Smoking, eating and drinking should be prohibited in areas of storage and use.

The Manual Handling Operations Regulations may apply to the handling of containers of this product.

Always keep in containers made of the same material as the supply container.

When the operatives are inside the spray booth, applying or not, and ventilation is not sufficient to control particles and solvent vapour concentrations, air-fed respiratory protective equipment should be worn, until the concentrations mentioned are below the work exposure limits.



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Storage

Storage in accordance with the legal procedures for chemical products.

Observe the label precautions. Store between 5 and 30 °C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking. Prevent unauthorised access. Containers which are opened should be properly resealed and kept in a upright position to prevent leakage. The principles contained in the HSE's guidance note Storage and Packaged Dangerous Substances should be observed when storing this product. Store separately from oxidising agents and strongly alkaline and strongly acidic materials, amines, alcohol and water.

"Rags used in the application or cleaning that are contaminated with non cured products can present an auto-ignition without notice after a few hours. Rags contaminated with products diluted by adding White Spirits can also present auto-ignition. Contaminated fabrics, rags and even protection gear must be removed from the premises at least once a day, always when closing, and must be disposed of far from other flammable materials in order to avoid fire spread in case of auto-ignition".

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in processes in which this product is used.

Engineering Measures

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and/or solvent vapours below the relevant occupational exposure limits, suitable respiratory protective equipment should be worn. (see 'Personal protection' below)

EXPOSURE LIMITS (ACGIH 2005) (2006/15/EEC)

TLV: Threshold Limit Value TWA: Time Weighted

Average STEL: Short Term Exposure Limit

CAS Nr: 822-06-0

Name: hexamethylene-di-isocyanate

TLV-TWA (ppm): 0,005

TLV-STEL (ppm):

Dir. 2006/15/EEC

8 h (ppm):

Short-term (ppm):

TLV-TWA (mg/m³):

TLV-STEL (mg/m³):

8 h. (mg/m³):

Short-term (mg/m³):

CAS Nr: 100-41-4

Name: ethylbenzene

TLV-TWA (ppm): 100 A3

TLV-STEL (ppm): 125

Dir. 2006/15/EEC

8 h (ppm): 100 D

Short-term (ppm): 200 D

TLV-TWA (mg/m³): 434

TLV-STEL (mg/m³): 543

8 h. (mg/m³): 442 D

Short-term (mg/m³): 884 D



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CAS Nr: 103-65-1

Name: propylbenzene

TLV-TWA (ppm):
TLV-STEL (ppm):
Dir. 2006/15/EEC
8 h (ppm):
Short-term (ppm):

TLV-TWA (mg/m³):
TLV-STEL (mg/m³):

8 h. (mg/m³):
Short-term (mg/m³):

CAS Nr: 108-67-8

Name: mesitylene

TLV-TWA (ppm):
TLV-STEL (ppm):
Dir. 2006/15/EEC
8 h (ppm): 20
Short-term (ppm):

TLV-TWA (mg/m³):
TLV-STEL (mg/m³):

8 h. (mg/m³): 100
Short-term (mg/m³):

CAS Nr: 1330-20-7

Name: xylene

TLV-TWA (ppm): 100 A4
TLV-STEL (ppm): 150
Dir. 2006/15/EEC
8 h (ppm): 50 D
Short-term (ppm): 100 D

TLV-TWA (mg/m³): 434
TLV-STEL (mg/m³): 651

8 h. (mg/m³): 221 D
Short-term (mg/m³): 442 D

CAS Nr: 95-63-6

Name: 1,2,4-trimethylbenzene

TLV-TWA (ppm):
TLV-STEL (ppm):
Dir. 2006/15/EEC
8 h (ppm): 20
Short-term (ppm):

TLV-TWA (mg/m³):
TLV-STEL (mg/m³):

8 h. (mg/m³): 100
Short-term (mg/m³):

CAS Nr: 64742-95-6

Name: Solvent naphtha (petroleum), light arom.

TLV-TWA (ppm):
TLV-STEL (ppm):
Dir. 2006/15/EEC
8 h (ppm):
Short-term (ppm):

TLV-TWA (mg/m³):
TLV-STEL (mg/m³):

8 h. (mg/m³):
Short-term (mg/m³):

CAS Nr: 108-65-6

Name: 2-methoxy-1-methylethyl acetate

TLV-TWA (ppm):
TLV-STEL (ppm):
Dir. 2006/15/EEC
8 h (ppm): 50 D
Short-term (ppm): 100 D

TLV-TWA (mg/m³):
TLV-STEL (mg/m³):

8 h. (mg/m³): 275 D
Short-term (mg/m³): 550 D

D - Indicates a risk of absorption through the skin. A3 -
Carcinogenic in animals.
A4 - No classified as carcinogenic in humans.



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Personal protection

Respiratory protection:

Air-fed respiratory protective equipment should be worn when this product is sprayed. This should be in addition to other measures taken to reduce exposure (e.g. in booth design and operation and process modifications). Non-essential and unprotected people should be excluded from the area if exposure is possible.

Hand protection:

When skin exposure may occur, advice should be sought from glove suppliers on appropriate types.

	<u>Recommended gloves</u>	<u>Alternative gloves</u>
Alcohol	Neoprene rubber	Nitril rubber
Glycol ester	Butyl rubber	Neoprene rubber
Halogen	Polyvinyl Alcohol	Nitro rubber
Ketone	Polyvinyl Alcohol	Latex rubber
Aliphatic hydrocarbons	Neoprene rubber	Nitril rubber
Aromatic hydrocarbons	Polyvinyl Alcohol	Nitril rubber
Esters	Polyvinyl Alcohol	Neoprene rubber
Ethers	Polyvinyl Alcohol	Nitril rubber

Barrier creams may help to protect exposed areas of the skin but are not substitutes for full physical protection. They should not be applied once exposure has occurred.

Eye protection:

Eye protection (e.g. glasses) designed to protect against liquid splashes should be worn.

Skin protection:

Anti-static cotton or cotton/synthetic overalls which are resistant to high temperatures are suitable.

Grossly contaminated cloth should be removed and the skin washed with soap and water or a proprietary skin cleaner.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Fluid liquid	
Boiling point (°C):	> 35 °C	
Flash point: (°C):	21 - 55 °C	Method: Closed cup
Vapour density:	heavier than air	
Vapour explosion limit:	0,8 %	
Solubility in water:	Inmiscible	
pH:		
Density:	0,98± 0,03	

Hardener:

*Use in industrial facilities only.

10. STABILITY AND REACTIVITY

Stable under the recommended storage and handling conditions (See section 7).

In case of fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide, oxides of nitrogen, hydrogen cyanide, amines and alcohol may be generated.

Keep away from oxidising agents and strongly alkaline and strongly acidic materials. Exothermic reactions can occur with amines and alcohol. The product reacts slowly with water generating carbon dioxide, which can result in bursting of closed containers.



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11. TOXICOLOGICAL INFORMATION

There is no data available on special product-tests.

Based on the properties of the isocyanate content of this product, respiratory exposure may cause acute irritation and/or sensitisation of the respiratory system, resulting in asthmatic symptoms, wheezing and a tightness of the chest. Sensitised persons may subsequently show asthmatic symptoms when exposed to airborne concentrations of isocyanates well below the work exposure limit. Repeated exposure may lead to permanent respiratory disability.

Exposure to organic solvent vapours above the work exposure limit may result in adverse health effects such as irritation of the mucous membrane and the respiratory system and adverse effects on the liver, kidney and central nervous system. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the product may lead to removal of natural grease from the skin resulting in non-allergic contact dermatitis and absorption through the skin. Splashes in the eyes may cause irritation and reversible local damage.

Irritating preparation. Liquid splashes in the eye may cause irritant symptoms.

Irritating preparation. Inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract. There may also occur severe respiratory difficulties, stimulation of the central nervous system and in extreme cases unconsciousness.

12. ECOLOGICAL INFORMATION

There is no data available on special product-tests.

The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters.

CAS Nr: 822-06-0

Name: hexamethylene-di-isocyanate

Readily biodegradable: ND Bioaccumulation potential: ND LogPow: ND
BCF: ND

CAS Nr: 100-41-4

Name: ethylbenzene

N-Class: 10mg/l < L(E)C50 < 100mg/l

Fish LC50 96 h (mg/l): 12

Seaweed EC50 48 h (mg/l): 33

Readily biodegradable: ND Bioaccumulation potential: ND LogPow:
3,15 BCF: ND

CAS Nr: 103-65-1

Name: propylbenzene

N-Class: 1mg/l < L(E)C50 < 10mg/l

Readily biodegradable: Not

Bioaccumulation potential: ND

LogPow: 3,6

BCF: ND

CAS Nr: 108-67-8

Name: mesitylene

N-Class: 1mg/l < L(E)C50 < 10mg/l

Fish LC50 96 h (mg/l): 13

Readily biodegradable: Not

Bioaccumulation potential: ND

LogPow: 3,93

BCF: 342



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CAS Nr: 1330-20-7

Name: xylene

N-Class: 10mg/l < L(E)C50 < 100mg/l

Seaweed EC50 48 h (mg/l): 1 - 100

Fish Oncorhynchus mykiss - LC50 96 h (mg/l): 3 - 8

Microorganisms Daphnia Magna - LC50 48 h (mg/l): 16

Readily biodegradable: Yes Bioaccumulation potential: Low

LogPow: 3,2 BCF: 10-15

CAS Nr: 95-63-6

Name: 1,2,4-trimethylbenzene

N-Class: 1mg/l < L(E)C50 < 10mg/l

Readily biodegradable: Not Bioaccumulation potential: ND

LogPow: 4,09 BCF: 275

CAS Nr: 64742-95-6

Name: Solvent naphtha (petroleum), light arom.

N-Class: 1mg/l < L(E)C50 < 10mg/l

Readily biodegradable: ND Bioaccumulation potential: ND LogPow:

2,1-6 BCF: ND

CAS Nr: 108-65-6

Name: 2-methoxy-1-methylethyl acetate

N-Class: L(E)C50 > 100 mg/l

Fish Pimephales promelas - LC50 96 h (mg/l): 161

Bacteria Lodo activado - 0,5 h CE20 (mg/l): > 1000

Microorganisms Daphnia Magna - LC50 48 h (mg/l): 408-500

Readily biodegradable: Yes Bioaccumulation potential: Not anticipated

LogPow: 0,43 BCF: ND

This preparation has been evaluated following the conventional calculation method of the European Directive 1999/45/EEC - Regulation of Dangerous Preparations and it is classified as harmful for the environment.

13. DISPOSAL CONSIDERATIONS

Do not allow into drains or water courses or dispose of where ground or surface waters may be affected. It can be burned in appropriate installation, respecting the waste regulation of the local authorities.

Regarding packaging, please refer to Directive 94/62 DOCE L 365 of 31/12/94.



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14. TRANSPORT INFORMATION

Transport always according to the ADR norms for road transport, the RID norms for the railway transport, the IMDG norms for the sea transport and the ICAO/IATA norms for air transport.

Proper Shipping Name: PAINT RELATED MATERIAL

UN no:1263 Packing Group: III

Road/rail (ADR - RID)

Class: 3 Classification Code: F1 Label: 3

Sea (IMDG)

Class: 3 Marine Pollutant: P Label: 3

EmS: F-E,S-E

Air (ICAO-IATA)

Class: 3 Label: 3

15. REGULATORY INFORMATION

Under the terms of Directive 1999/45/EEC and later adoptions and modifications, the product is labelled as follows:

Harzard Symbols	(Xn) HARMFUL, (N) DANGEROUS FOR THE ENVIRONMENT
Contains:	
R-Phrases:	R10.- Flammable. R20/21/22.- Harmful by inhalation, in contact with skin and if swallowed. R36/37.- Irritating to eyes and respiratory system. R51/53.- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R65.- Harmful: may cause lung damage if swallowed.
S-Phrases:	S23.- Do not breathe vapour S24/25.- Avoid contact with skin and eyes. S29.- Do not empty into drains. S51.- Use only in well-ventilated areas. S60.- This material and its container must be disposed of as hazardous waste. S7/8.- Keep container tightly closed and dry.
Other Phrases:	Contains isocyanates. See information supplied by the manufacturer

16. OTHER INFORMATION

Complete text of R-phrases listed in Section 2:

R23.- Toxic by inhalation.

R36/37/38.- Irritating to eyes, respiratory system and skin. R42/43.- May cause sensitisation by inhalation and skin contact. R20.- Harmful by inhalation.

R11.- Highly flammable.

R65.- Harmful: may cause lung damage if swallowed. R37.- Irritating to respiratory system.

R51/53.- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R10.- Flammable.

R20/21.- Harmful by inhalation and in contact with skin. R38.- Irritating to skin.

R36.- Irritating to eyes.



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In case of mixing different products, labels and safety data sheets of all products must be observed .

The information contained in this safety data sheet is based on the present state of knowledge and current national and EU legislation. As the specific conditions of use of this product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions.

The information of the safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

The information contained in this safety data sheet is provided in accordance with the requirements of Directive 2001/58/EEC and later adoptions and modifications.