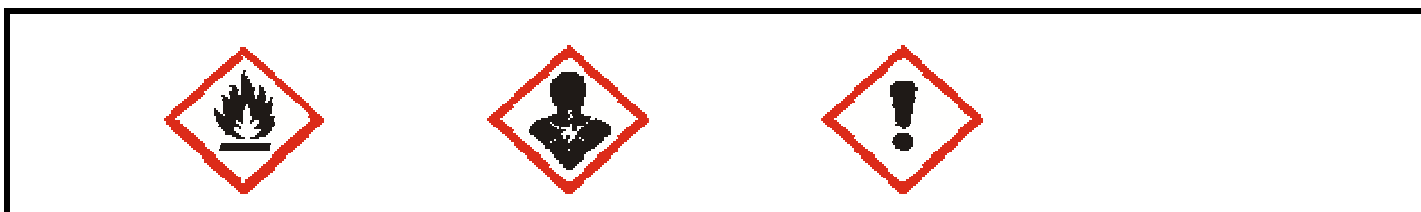


MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: BANNOH 500 RED BROWN , BASE	Product No. : 5052M
Manufacutrer / Supplier	: TOA-Chugoku Paints Co.,Ltd	
	110 Moo 5 Wellgrow I.E. Bangna-Trad Rd. Km.36,	
	Bangsamak, Bangpokong Chachoengsao, 24180	
	Telephone no. 66 02 2602701-8 , 66 038 570498-9	Fax : 66 02 2602700 , 66 038 570500
In case of emergency	: Telephone no. 66 02 2602701-8 , 66 038 570501	
Material intended use	: Coating: Solvent (Refer to technical data sheet)	

2. HARZARDS IDENTIFICATION



3. COMPOSITION / INFORMATION ON INGREDIENTS

This product contains the following hazardous ingredients				
Ingredient name	CAS No.	EC No.	% by weight	Classification
Xylene	1330-20-7	215-535-7	5 - 10	R10 Xn; R20/21 Xi; R38
n-butanol	71-36-3	200-751-6	2 - 4	R10 Xn; R22 Xi; R41 , R37/38
1-methoxy-2-propanol	107-98-2	203-539-1	2 - 4	R10
4-methylpentan-2-one	108-10-1	203-550-1	2 - 4	F; R11 Xn; R20 Xi; R36/37 R66

4. FIRST-AID MEASURES

<u>First-aid measures</u>	
General	: In all cases of doubt, or when syptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with running clean fresh water for at least 15 minutes, keeping the eyelids open and seek medical attention.
Skin contact	: Remove contaminated clothing and shoes. Wash skin throughly with soap and water or use recognised skin cleanser. Do not use solvents or thinners.
Inhalation	: Remove to fresh air. Keep patient warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occures, provide artificial respiration or oxygen by trained personnel. Give nothing by mouth. If unconscious, place in recovery position and seek medical advice.
Ingestion	: If accidentally swallow obtain immediate medical attention and show the container or label. Keep patient warm and at rest. Do not induce vomitting.

5. FIRE FIGHTING MEASURES

Extinguishing media	: Recommended : alcohol-resistant foam, CO2, powders, water spray. Do not use - water jet.
Recommendation	: Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Appropriate breathing apparatus may be required. Cool closed containers exposed to fire with water. Do not release runoff from fire to sewers or waterways.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	: Remove sources of ignition and ventilate the area, avoid breathing vapour or mist. Do not turn lights or unprotected electrical equipment on or off.
Spill	: Contain and absorb spillage with non-combustible material e.g. sand, earth, vermiculite. Place in closed container outside building and disposal according to local regulation. Preferably clean with a detergent. Do not use solvents. Do not allow spills to enter drains or water courses. If drain, lakes, river, or sewers are contaminated, inform the appropriate authorities in accordance with local regulations.

Note : see section 8 for personal protective equipment and section 13 for waste disposal.

7. HANDLING AND STORAGE

Handling	: This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.
In storage	: Handle containers carefully to prevent damage and spillage. Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.
In use	: Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precaution. Put on appropriate personal protective equipment. Smoking, eating and drinking should be prohibited in areas where this material is handled. Never use pressure to empty. Container is not a pressure vessel. Always keep in containers made from the same material as the original one. The product may charge electrostatically. Always use earthing leads when pouring solvents and transferring product. Operators should wear clothing which does not generate static and antistatic footwear; floor should be conductive type. When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapour in all cases. In such circumstances they should wear a compressed air-fed respirator during the spraying process and until such time as the particulates and solvent vapour concentration has fallen below the exposure limits.
Storage	: Store in accordance with local regulation. Observe label precautions. Store in a cool, well ventilated area away from incompatible materials and source of heat and direct sunlight. Keep away from ; oxidising agent, strong alkalis, strong acids.

Storage

Store on concrete or other impervious floor, preferably with bunding to contain any spillage.
 Do not stack more than 3 pallets high.
 Keep container tightly closed. Container that have been opened must be carefully resealed and kept upright to prevent leakage.
 Prevent unauthorised access.
 This is highly flammable liquid. Refer to the requirements of local regulations for the storage and handling regulations pertaining to this material.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

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 solvent vapours below the occupational exposure limits (OEL) suitable respirator must be worn.

Exposure Limits

Exposure standards are those provided by the ACGIH (American Conference of Government Industrial Hygienists).

<u>Material</u>	<u>Occupational Exposure Limits</u>	
	<u>STEL-15 min.ave</u>	<u>Long term-TWA-8hr</u>
xylene	150 ppm	100 ppm
4-methylpentan-2-one	300 ppm	200 ppm
n-butanol	100 ppm	50 ppm
1-methoxy-2-propanol	100 ppm	50 ppm

Personal protection equipment

Respiratory Protection : Use a properly fitted, air-purifying or air-respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

When concentrations exceed the exposure limits shown above, worker must wear appropriate respirators. Provision of other control such as exhaust ventilation should be considered if practical.

Eye Protection : Wear safety eyewear, e.g. safety spectacles, goggle or visors to protect against the splash of liquids. Eyewear should comply with an approved standard.

Wear a full face shield if mixing or pouring operations pose a risk of splashes.

An eyewash station is suggested as a good work place practice.

Hands Protection : Gloves of an appropriate material should worn during mixing and application.

For prolonged or repeated handling, use the following type of gloves: gloves; nitrile.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.

Skin Protection : Overalls which cover the body, arms and legs should worn. Skin should not be exposed.

Barrier creams may help to protect areas which are difficult to cover such as face and neck.

They should however not be applied once exposure has occurred. Petroleum jelly based types Such as vaseline should not be used. All part of the body should be washed after contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : () Solid (x) Liquid () Paste () Powder	Odour : Smell of solvent	Density : 1.40 g/cm ³
	Colour : Red Brown	Flash point : 27 °C
Solubility : Insoluble in water	Explosion limits : LEL% 1.4 UEL% 12.3	
Vapour pressure : 4200 Pa, 20 °C	Autoignition temperature : 315 °C	

10. STABILITY AND REACTIVITY

Stable under recommended storage and handling conditions (see section 8). When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxide of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strong acid materials in order to avoid possible exothermic reactions.

11. TOXICOLOGICAL INFORMATION

There are no data available on the product itself.

Exposure to solvent vapour concentration from the component solvents in excess of the state occupational exposure limits may result in adverse health effects such as mucous and membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eye may cause irritation and soreness with possible reversible damage.

12. ECOLOGICAL INFORMATION

There is no data available on the preparation itself.

Do not allow to enter drains or water courses.

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment.

Aquatic ecotoxicity

Material name	Test	Result	Species	Exposure
xylene	Mortality	Acute LC50 3300 to 4093 u/L	Fish-Rainbow	96 hours.
		Fresh water	trout, dandelion-trout- Oncorhynchus mykiss	
4-methylpentan-2-one	Mortality	Acute LC50 53700 to 3320000 u/L	Fish-Fathead minnow	96 hours
			Pimephales promelas	
n-butanol	Intoxication	Acute LC50 198300 to 2072000 u/L	Daphnia-Water flea-	48 hours.
	Mortality	Fresh water	Daphnia magna.	
		Actute LC50 2250000 u/L	Fish - Bleak alburnus	96 hours
		Marine water		
Mortality	Actute EC50 100 to 500 mg/L	Fish-Bluegill	96 hours	
	Fresh water	- Lepomis macrochirus		
Mortality	Actute LC50 1940000 u/L	Fish-Fathead minnow	96 hours	
	Fresh water	Pimephales promelas		
Mortality	Actute LC50 2300000 u/L	Fish - Bleak alburnus	96 hours	
		Marine water		

Biodegradability

Ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily

13. DISPOSAL CONSIDERATION

Method of disposal : Do not allow into drain or water courses. Wastes and empty containers should be disposal of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. TRANSPORT INFORMATION

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

International transport regulations

Proper shipping name : Paint
 UN number : 1263
 Class : 3
 Packing group : III
 Label :



Additional information

ADR / RID : Hazardous identification no. : 30
 : Special provision : 640E
 IMDG : Class : 3
 : Proper shipping name : Paint
 : Emergency schedules (EmS) : F-E, S-E
 : Marine pollutant : No

15. REGULATORY INFORMATION

The product complies with these local regulations.

EU regulations : The product is classified and labelled for supply in accordance with the Directive 1999/45/EC as follows:

hazard symbol :



Harmful

Risk phrases :

- R10 Flammable
- R11 Highly flammable.
- R20/21 Harmful by inhalation and in contact with skin
- R22 Harmful if swallowed.
- R36/37 Irritating to eyes and respiratory system.
- R38 Irritaing to skin.
- R41 Risk of serious damage to eyes.
- R66 Repeated exposure may cause skin dryness or cracking.
- R67 Vapours mau cause drowsiness and dizziness.

Safety phrases : S23 Don not breathe vapour / spray.
S36/37 Wear suitable protective clothing and gloves.
S51 Use only in well-ventilated areas.

Contains : Xylene , Epoxy resin MW 700-1100 and MW <700

16. OTHER INFORMATION

CEPE Classification : 1

Full text of R-phrases : R10 Flammable
R11 Highly flammable.
R20/21 Harmful by inhalation and in contact with skin
R22 Harmful if swallowed.
R36/37 Irritating to eyes and respiratory system.
R38 Irritaing to skin.
R41 Risk of serious damage to eyes.
R66 Repeated exposure may cause skin dryness or cracking.
R67 Vapours mau cause drowsiness and dizziness.

The information on this safety data sheet is based upon the present state of our knowledge and on current law.

The product should not be used for purposes other than shown in the product data sheet without first obtaining written advice.

It is always the responsibility of the user to take all necessary steps to meet the demands of applicable legislation.

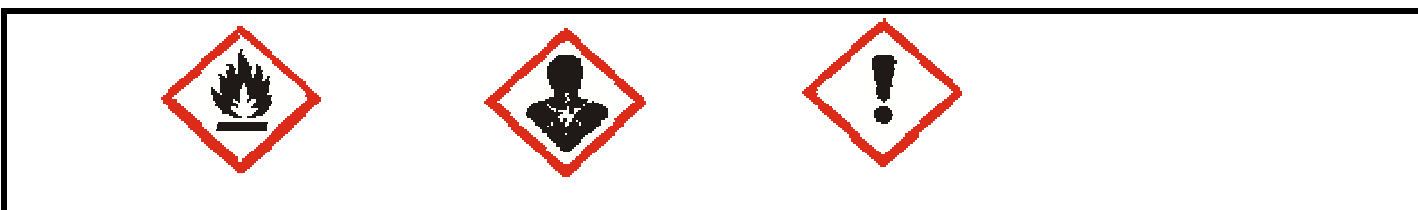
The information in this Material Safety Data Sheet is required according to legislation.

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: BANNOH 500 , HARDENER	Product No. : 5052M
Manufacutrer / Supplier	: TOA-Chugoku Paints Co.,Ltd	
	110 Moo 5 Wellgrow I.E. Bangna-Trad Rd. Km.36,	
	Bangsamak, Bangpokong Chachoengsao, 24180	
	Telephone no. 66 02 2602701-8 , 66 038 570498-9	Fax : 66 02 2602700 , 66 038 570500
In case of emergency	: Telephone no. 66 02 2602701-8 , 66 038 570501	
Material intended use	: Coating: Solvent (Refer to technical data sheet)	

2. HARZARDS IDENTIFICATION



3. COMPOSITION / INFORMATION ON INGREDIENTS

This product contains the following hazardous ingredients				
Ingredient name	CAS No.	EC No.	% by weight	Classification
Xylene	1330-20-7	215-535-7	7- 9	R10 Xn; R20/21 Xi; R38
n-butanol	71-36-3	200-751-6	7 - 9	R10 Xn; R22 Xi; R41 , R37/38
2,4,6 tris(dimethylaminomethyl)phenol	90-72-2	202-013-9	1.5 - 2.5	Xn; R22 Xi; R36/38

4. FIRST-AID MEASURES

<u>First-aid measures</u>	
General	: In all cases of doubt, or when syptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with running clean fresh water for at least 15 minutes, keeping the eyelids open and seek medical attention.
Skin contact	: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do not use solvents or thinners.
Inhalation	: Remove to fresh air. Keep patient warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occures, provide artificial respiration or oxygen by trained personnel. Give nothing by mouth. If unconscious, place in recovery position and seek medical advice.
Ingestion	: If accidentally swallow obtain immediate medical attention and show the container or label. Keep patient warm and at rest. Do not induce vomitting.

5. FIRE FIGHTING MEASURES

Extinguishing media	: Recommended : alcohol-resistant foam, CO2, powders, water spray. Do not use - water jet.
Recommendation	: Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Appropriate breathing apparatus may be required. Cool closed containers exposed to fire with water. Do not release runoff from fire to sewers or waterways.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Remove sources of ignition and ventilate the area, avoid breathing vapour or mist.
Do not turn lights or unprotected electrical equipment on or off.
- Spill : Contain and absorb spillage with non-combustible material e.g. sand, earth, vermiculite.
Place in closed container outside building and disposal according to local regulation.
Preferably clean with a detergent. Do not use solvents.
Do not allow spills to enter drains or water courses.
If drain, lakes, river, or sewers are contaminated, inform the appropriate authorities in accordance with local regulations.

Note : see section 8 for personal protective equipment and section 13 for waste disposal.

7. HANDLING AND STORAGE

- Handling : This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.
- In storage : Handle containers carefully to prevent damage and spillage.
Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.
- In use : Avoid skin and eye contact. Avoid inhalation of vapours and spray mists.
Observe label precaution. Put on appropriate personal protective equipment.
Smoking, eating and drinking should be prohibited in areas where this material is handled.
Never use pressure to empty. Container is not a pressure vessel. Always keep in containers made from the same material as the original one.
The product may charge electrostatically. Always use earthing leads when pouring solvents and transferring product. Operators should wear clothing which does not generate static and antistatic footwear; floor should be conductive type.
When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapour in all cases. In such circumstances they should wear a compressed air-fed respirator during the spraying process and until such time as the particulates and solvent vapour concentration has fallen below the exposure limits.
- Storage ; Store in accordance with local regulation. Observe label precautions. Store in a cool, well ventilated area away from incompatible materials and source of heat and direct sunlight.
Keep away from ; oxidising agent, strong alkalis, strong acids.
Store on concrete or other impervious floor, preferably with bunding to contain any spillage.
Do not stack more than 3 pallets high.
Keep container tightly closed. Container that have been opened must be carefully resealed and kept upright to prevent leakage.
Prevent unauthorised access.
This is highly flammable liquid. Refer to the requirements of local regulations for the storage and handling regulations pertaining to this material.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

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 solvent vapours below the occupational exposure limits (OEL) suitable respirator must be worn.

Exposure Limits

Exposure standards are those provided by the ACGIH (American Conference of Government Industrial Hygienists).

<u>Material</u>	<u>Occupational Exposure Limits</u>	
	<u>STEL-15 min.ave</u>	<u>Long term-TWA-8hr</u>
xylene	150 ppm	100 ppm
n-butanol	100 ppm	50 ppm

Personal protection equipment

Respiratory Protection : Use a properly fitted, air-purifying or air-respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

When concentrations exceed the exposure limits shown above, worker must wear appropriate respirators. Provision of other control such as exhaust ventilation should be considered if practical.

Eye Protection : Wear safety eyewear, e.g. safety spectacles, goggle or visors to protect against the splash of liquids. Eyewear should comply with an approved standard.

Wear a full face shield if mixing or pouring operations pose a risk of splashes.

An eyewash station is suggested as a good work place practice.

Hands Protection : Gloves of an appropriate material should worn during mixing and application.

For prolonged or repeated handling, use the following type of gloves: gloves; nitrile.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.

Skin Protection : Overalls which cover the body, arms and legs should worn. Skin should not be exposed.

Barrier creams may help to protect areas which are difficult to cover such as face and neck.

They should however not be applied once exposure has occurred. Petroleum jelly based types such as vaseline should not be used. All part of the body should be washed after contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : () Solid (x) Liquid () Paste () Powder	Odour : Smell of solvent	Density : 0.91 g/cm ³
	Colour : Yellowish Clear	Flash point : 27 °C
Solubility : Insoluble in water	Explosion limits : LEL% 1.4 UEL% 12.3	
Vapour pressure : 4200 Pa, 20 °C	Autoignition temperature : 343 °C	

10. STABILITY AND REACTIVITY

Stable under recommended storage and handling conditions (see section 8). When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxide of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strong acid materials in order to avoid possible exothermic reactions.

11. TOXICOLOGICAL INFORMATION

There are no data available on the product itself.

Exposure to solvent vapour concentration from the component solvents in excess of the state occupational exposure limits may result in adverse health effects such as mucous and membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eye may cause irritation and soreness with possible reversible damage.

12. ECOLOGICAL INFORMATION

There is no data available on the preparation itself.

Do not allow to enter drains or water courses.

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment.

Aquatic ecotoxicity

Material name	Test	Result	Species	Exposure
xylene	Mortality	Actute LC50 3300 to 4093 u/L	Fish-Rainbow	96 hours.
		Fresh water	trout,donaldson-trout- Oncorhynchus mykiss trout,donaldson-trout- Oncorhynchus mykiss	
n-butanol	Intoxication	Actute LC50 198300 to 2072000 u/L	Daphnia-Water flea-	48 hours.
		Fresh water	Daphnia magna.	
	Mortality	Actute LC50 2250000 u/L	Fish - Bleak alburnus	96 hours
		Marine water		
	Mortality	Actute EC50 100 to 500 mg/L	Fish-Bluegill	
	Fresh water	- Lepomis macrochirus	96 hours	
Mortality	Actute LC50 1940000 u/L	Fish-Fathead minnow		
	Fresh water	Pimephales promelas	96 hours	
Mortality	Actute LC50 2300000 u/L	Fish - Bleak alburnus		
	Marine water			

Biodegradability

Ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily

13. DISPOSAL CONSIDERATION

Method of disposal : Do not allow into drain or water courses. Wastes and empty containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. TRANSPORT INFORMATION

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

International transport regulations

Proper shipping name : Paint
 UN number : 1263
 Class : 3
 Packing group : III
 Label :



Additional information

ADR / RID : Hazardous identification no. : 30
 : Special provision : 640E
 IMDG : Class : 3
 : Proper shipping name : Paint
 : Emergency schedules (EmS) : F-E, S-E
 : Marine pollutant : No

15. REGULATORY INFORMATION

The product complies with these local regulations.

EU regulations : The product is classified and labelled for supply in accordance with the Directive 1999/45/EC as follows:

hazard symbol :



Harmful

Risk phrases : R10 Flammable
 R20 Harmful by inhalation.
 R41 Risk of serious damage to eyes.
 R38 Irritating to skin.
 R43 May cause sensitisation by skin contact.

Safety phrases : S23 Do not breathe vapour / spray
 S24 Avoid contact with skin
 S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S37/39 Wear suitable gloves and eye/face protection.
 S51 Use only in well-ventilated areas.

Contains : Xylene

16. OTHER INFORMATION

CEPE Classification	:	1	
Full text of R-phrases	:	R10	Flammable
		R20/21	Harmful by inhalation and in contact with skin.
		R22	Harmful if swallowed.
		R36/38	Irritating to eyes and skin.
		R37/38	Irritating to respiratory system and skin.
		R38	Irritating to skin.
	R41	Risk of serious damage to eyes.	

The information on this safety data sheet is based upon the present state of our knowledge and on current law.

The product should not be used for purposes other than shown in the product data sheet without first obtaining written advice.

It is always the responsibility of the user to take all necessary steps to meet the demands of applicable legislation.

The information in this Material Safety Data Sheet is required according to legislation.