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MATERIAL SAFETY DATA SHEET

PUFFIN EPOXY TOPCOAT WET & COLD BASE B

TRADE NAME : PUFFIN EPOXY TOPCOAT WET & COLD BASE B

1. IDENTIFICATION OF SUBSTANCE AND COMPANY

Identification of Substance or Preparation

Chemical description : Penalkamine
Recommendation : Hardener

Company / Undertaking Identificaation Supplier

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2. HAZARD IDENTIFICATION

Classification of the substance or mixture

- **FLAMMABLE LIQUIDS - Category 4**
- **ACUTE TOXICITY (oral) - Category 5**
- **SKIN CORROSION/IRRITATION - Category 1B**
- **SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1**
- **SKIN SENSITIZATION - Category 1**

GHS label elements

Signal word : **Danger.**

Hazard statements:

H227 - Combustible liquid.
H303 - May be harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.

Precautionary statements

Prevention :

P280 - Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection. Wear protective clothing.

P210 - Keep away from flames and hot surfaces. - No smoking.

P261 - Avoid breathing vapour. P264 - Wash hands thoroughly after handling.

P272 - Contaminated work clothing should not be allowed out of the workplace.

Response:

P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.

P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.

P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.

P333 + P313 - If skin irritation or rash occurs: Get medical attention.

P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage:

P405 - Store locked up.

P403 - Store in a well-ventilated place.

P235 - Keep cool.

Disposal:P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Symbol :



3. COMPOSITION/INFORMATION ON INGREDIENTS:

Substance/mixture : Mixture

Product/Ingredients name	%	CAS Number
benzyl alcohol	13 – 30	100-51-6
3-aminopropyldimethylamine	3 – 7	109-55-7
2,4,6 tris(dimethylaminomethyl)phenol	3 - 7	90-72-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

Description of necessary first aid measures

- 1. Inhalation :** Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- 2. Ingestion :** Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- 3. Skin contact:** Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- 4. Protection of first-aiders :** Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Most important symptoms and effects, both acute and delayed.

Potential acute health effects

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : May be harmful if swallowed. May cause burns to mouth, throat and stomach.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Eye contact : Causes serious eye damage.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : Adverse symptoms may include the following: stomach pains

Skin : Adverse symptoms may include the following: pain or irritation redness blistering may occur.

Eyes : Adverse symptoms may include the following: pain watering redness.

Indication of immediate medical attention and special treatment needed, if necessary

Specific treatments : Not available.

Notes to physician : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products: Decomposition products may include the following materials:carbon dioxide carbon monoxide nitrogen oxide.

Special precautions for firefighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark : Not available.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with noncombustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal

7. HANDLING AND STORAGE

Precautions for safe handling : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on

hygiene measures. Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination

Storage hazard class Huntsman Advanced Materials : Storage class 8, Corrosive substances

8. EXPOSURE CONTROL PERSONAL PROTECTION

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

Control parameter

Ingredient name	Exposure limits
None.	

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere 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. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection : Use a properly fitted, air-purifying or air-fed 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.

Hand protection :

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Eye protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary

Material of gloves for long term application (BTT>480min): : butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)

Material of gloves for short term/splash application (10min <BTT<480min): : nitrile rubber, neoprene

(BTT = Break Through Time)

Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Physical state	: Liquid.
Colour	: Light yellow
Odour	: Amine-like
Odour threshold	: Not available
PH	: 10 to 12 [Conc. (% w/w): 10%]
Melting point	: Not available.
Initial Boiling point and boiling range	: 135°C (275°F)
Flash point	: Closed cup: 76°C (168.8°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]
Evaporation rate(butyl acetate = 1)	: Not available.

Flammability (solid, gas)	: Not available.
Upper/Lower flammability orexplosivelimits	: Not available.
Vapour pressure	: Not available.
Vapour density	: Not available.
Relative Density	: Not available.
Solubility	: Partially soluble
Water solubility	:Partially soluble
Partition coefficient : noctanol/water	: Not available
Auto-ignition temperature.	: Not available.
Viscosity	: Dynamic (room temperature): 700 to 2000 mPa·s (700 to 2000cP)25 deg C
Explosive properties	: Not available
Oxidising properties	: Not available
Other information	
Density	: 1.01 g/cm ³ [20°C (68°F)]
No additional information.	

10. STABILITY AND REACTIVITY

Chemical Stability : The product is stable

Possibility of Hazardous reaction : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : strong acids, strong bases, strong oxidising agents

Hazardous Decomposition Products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Decomposition products may include the following materials:Carbon oxides, Nitrogen oxides, Burning produces obnoxious and toxic fumes.

11. TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : May be harmful if swallowed. May cause burns to mouth, throat and stomach

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Eye contact : Causes serious eye damage

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : Adverse symptoms may include the following: stomach pains

Skin contact : Adverse symptoms may include the following:

pain or irritation

redness

blistering may occur

Eye contact : Adverse symptoms may include the following:

pain

watering

redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Acute toxicity

Product/Ingredient name	Endpoint	Species	Result	Exposure
benzyl alcohol	LC50 Inhalation Dusts and mists	Rat - Male, Female	>4178 mg/m ³	4 hours
	LD50 Oral	Rat - Male	1620 mg/kg	-
3-aminopropyldimethylamine	LC50 Inhalation Vapour	Rat - Male, Female	24.8 mg/l	2 hours
	LD50 Dermal	Rat	>1000 mg/kg	-
	LD50 Oral	Rat - Male, Female	410mg/kg	-
2,4,6-tris (dimethylaminomethyl)	LD50 Dermal	Rat - Male	>971 mg/kg	-
phenol	LD50 Oral	Rat - Male, Female	2169 mg/kg	-

Irritation/ corrosion

Product/Ingredient name	Test	Species	Result
benzyl alcohol	OECD 404 Acute Dermal Irritation/ Corrosion	Rabbit	Skin - Non-irritant.
	OECD 405 Acute Eye Irritation/ Corrosion	Rabbit	Eye - irritant.

3-aminopropyl dimethylamine	OECD 404 Acute Dermal Irritation/ Corrosion	Rabbit	Skin – Corrosive
2,4,6-tris (dimethylaminomethyl) phenol	OECD 404 Acute Dermal Irritation/ Corrosion EPA CFR	Rabbit	Skin – Corrosive
		Rabbit	Eyes - Corrosive

Conclusion/Summary

Skin :

benzyl alcohol: Non-irritating to the skin.

-Aminopropyl dimethylamine: Corrosive to the skin.

2,4,6-tris(dimethylaminomethyl)phenol: Corrosive to the skin.

Eyes :

benzyl alcohol: Irritating to eyes.

2,4,6-tris(dimethylaminomethyl)phenol: Corrosive to eyes.

Sensitisation

Product/Ingredient name	Test	Route of exposure	Species	Result
benzyl alcohol	-	Skin	Guinea pig	Not sensitizing
3-aminopropyl dimethylamine	OECD 406 Skin Sensitization	Skin	Guinea pig	Sensitising
2,4,6-tris (dimethylaminomethyl) phenol	OECD 406 Skin Sensitization	Skin	Guinea pig	Sensitising

Potential chronic health effects

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin contact : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Eye contact : No known significant effects or critical hazards

Carcinogenicity : No known significant effects or critical hazards

Mutagenicity : No known significant effects or critical hazards

Teratogenicity : No known significant effects or critical hazards

Developmental effects : No known significant effects or critical hazards

Fertility effects : No known significant effects or critical hazards

Chronic toxicity

Product/Ingredient name	Test	Result type	Result	Exposure
benzyl alcohol	-	NOAEL Sub-chronic NOAEL Oral	400 mg/kg	central nervous system (CNS)
3-aminopropyldimethylamin	OECD 412 Repeated Dose Inhalation Toxicity 28-day or 14-day Study	NOEC Dusts and mists	1072 mg/ m ³	-
2,4,6-tris (dimethylaminomethyl) phenol	OECD 407 Repeated Dose 28-day Oral Toxicity Study in Rode	NOAEL Subacute NOAEL Oral	50 mg/kg/d	-
	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	NOEL Subacute NOEL Oral	15 mg/kg	brain, liver, spleen

Carcinogenicity

Product/ingredient name	Test	Species	Exposure	Result	Route of exposure	Target organs
benzyl alcohol	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat	103 weeks; 5 days per week	Negative	-	-

Conclusion/Summary :

3-Aminopropyldimethylamine: In accordance with column 2 of Annex VII - X of Regulation (EC) No 1907/2006, the test for this property of the substance does not need to be conducted.

Mutagenicity

Product/Ingredient name	Test	Result type
benzyl alcohol	OECD 474 Mammalian Erythrocyte Micronucleus Test	Negative
3-aminopropyldimethylamine	OECD 471 Bacterial Reverse Mutation Test	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Negative
2,4,6-tris (dimethylaminomethyl) phenol	OECD 474 Mammalian Erythrocyte Micronucleus Test	Negative
	OECD 471 Bacterial Reverse Mutation Test	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Negative

Conclusion/Summary :

3-Aminopropyldimethylamine: Not mutagenic in a standard battery of genetic toxicological tests.**2,4,6-tris(dimethylaminomethyl)phenol:** Not mutagenic in a standard battery of genetic toxicological tests.

Teratogenicity

Product/Ingredient name	Test	Species	Result / Result type
benzyl alcohol	-	Mouse - Female	550 mg/kg NOAEL
3-aminopropyldimethylamine	OECD 421 Reproduction/ Developmental Toxicity Screening Test	Rat - Male, Female	200 mg/kg NOAEL

Reproductive toxicity

Product/Ingredient name	Test	Species	Result / Result type	Target organs
3-aminopropyldimethylamine	OECD 421 Reproduction/ Developmental Toxicity Screening Test	Rat	Oral: NOAEL	-
2,4,6-tris (dimethylaminomethyl) phenol	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Rat	Oral: NOEL	-

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2,4,6-tris(dimethylaminomethyl) phenol	Category 2	Not determined	brain

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential immediate effects : Not available.

Potential delayed effects: Not available.

Long term exposure

Potential immediate effects :Not available.

Potential delayed effects:Not available.

Aspiration hazard

Not available.

12. ECOLOGICAL INFORMATION

Environmental effects : No known significant effects or critical hazards.

Aquatic and terrestrial toxicity

Product/Ingredient name	Test	Endpoint	Exposure	Species	Result	
benzyl alcohol	OECD 202 Daphnia sp. Acute Immobilisation Test	EC50	48 hours	Daphnia	230 mg/l	
	OECD 201 Alga, Growth Inhibition Test	EgC50	72 hours Static	Algae	770 mg/l	
	EPA OPPTS	LC50	96 hours Static	Fish	460 mg/l	
	OECD 201 Alga, Growth Inhibition Test	NOEC	72 hours Static	Algae	310 mg/l	
	OECD 211 Daphnia Magna Reproduction Test	NOEC	21 days Semi Static	Daphnia	51 mg/l	
	DIN DIN 38412 Part 8	EC50	17 hours Static	Bacteria	95 mg/l	
	3-aminopropyldimethylamine	EU EC C.2 Acute Toxicity for Daphnia	EC50	48 hours Static	Daphnia	59.5mg/l
		DIN	EbC50 (biomass)	72 hours Static	Algae	53.5 mg/l
		DIN DIN 38412 Part 15	LC50	96 hours Static	Fish	122 mg/l
		DIN DIN 38412 Part 9	EbC10	72 hours Static	Algae	43 mg/l
DIN DIN 38412 Part 8		NOEC	17 hours Static	Bacteria	94.5mg/l	
2,4,6-tris (dimethylaminomethyl) phenol		OECD 201 Alga, Growth Inhibition Test	ErC50 (growth rate)	72 hours Static	Algae	84 mg/l
		Unknown guidelines	LC50	96 hours Static	Daphnia	718 mg/l
		-	LC50	96 hours Static	Fish	175 mg/l
		-	NOEC	72 hours	Algae	6.25 mg/l

Conclusion/Summary : benzyl alcohol: Not toxic or harmful to aquatic organisms.

Biodegradability

Product/ingredient name	Test	Period	Result
benzyl alcohol	OECD 301A Ready Biodegradability – DOC Die Away Test	21 days	95 to 97 %
3-aminopropyldimethylamine	OECD 301D Ready Biodegradability - Closed Bottle Test	20 days	95 to 97 %
2,4,6-tris (dimethylaminomethyl)phenol	OECD 301D Ready Biodegradability - Closed Bottle Test	28 days	95 to 97 %

Conclusion/Summary : **3-Aminopropyldimethylamine**: Readily biodegradable

Product/ingredient name	Aquatic half life	Photolysis	Biodegradability
benzyl alcohol	-	-	Readily
3 aminopropyldimethylamine	-	50%; 0.14 day(s)	Readily
2,4,6-tris(dimethylaminomethyl) phenol	-	-	Not Readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
benzyl alcohol	1.1	1	Low
3aminopropyldimethylamine	-0.352	-	Low
2,4,6-tris(dimethylaminomethyl) phenol	0.219	-	Low

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.

Soil/water partition coefficient (KOC) : Not available.

Results of PBT and vPvB assessment

Not applicable.

13.DISPOSAL CONSIDERATION

Disposal Methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container.

Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14.TRANSPORT INFORMATION

International transport regulations




14.1 UN number 14.2 UN proper shipping name

ADR/RID UN2735 : Amines, liquid, corrosive, n.o.s. (3-Aminopropyldimethylamine , 2,4,6-Tris (dimethylaminomethyl)phenol)

IMDG UN2735 : Amines, liquid, corrosive, n.o.s. (3-Aminopropyldimethylamine , 2,4,6-Tris (dimethylaminomethyl)phenol)

IATAUN2735

: Amines, liquid, corrosive, n.o.s. 3-Aminopropyldimethylamine
2,4,6-Tris (dimethylaminomethyl)phenol

	Transport hazard class(es)	Packing group	Environmental hazards	Special precautions for user	Additional information
ADR/RID		II	No	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.	Hazard identification number 80 Special provisions 274 Tunnel code E
IMDG		II	No	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	Emergency schedules (EmS) F-A S-B
IATA		II	No	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.	Passenger and Cargo Aircraft Quantity limitation: 1 L Packaging instructions: 851 Cargo Aircraft Only Quantity limitation: 30 L Packaging instructions: 855

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

15. REGULATORY INFORMATION

Hazard symbol or symbols :



Signal word : Danger

Hazard statements : Combustible liquid. May be harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction.

Precautionary statements

Prevention : Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection. Wear protective clothing. Keep away from flames and hot surfaces. - No smoking. Avoid breathing vapour. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Additional information : EU regulations

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Hazard symbol or symbols :



Xn, N Harmful, Dangerous for the environment

Risk phrases :

R22- Harmful if swallowed.

R41- Risk of serious damage to eyes.

R38- Irritating to skin.

R43- May cause sensitisation by skin contact.

R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases :

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.

S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

16. OTHER INFORMATION

Key to abbreviations :

- **ASTM = American Society for Testing Materials**
- **DNEL = Derived No Effect Level**
- **ETAD = The Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers**
- **GHS = Globally Harmonized System of Classification and Labelling of Chemicals**
- **IATA = International Air Transport Association**
- **IMDG = International Maritime Dangerous Goods**
- **OECD = Organisation for Economic Co-operation and Development**
- **PNEC = Predicted No Effect Concentration**

NOTES

PT.INDOWIJAYA SAKTI TEGUH has a responsibility to take reasonable care for our own health and safety and the health and safety of others who may be affected by our acts or omissions. This M.S.D.S. at the date of issue has Health and Safety Information of the product, and how to safely handle and use this product in the workplace.

All information given is our best knowledge, and because we cannot anticipate or control the conditions of the end use of this products, prior to usage, each user must determine by reviewing this M.S.D.S, Safe Handling and usage of this products in the Workplace.

PT.INDOWIJAYA SAKTI TEGUH believe this information to be reliable, and in good faith, but no guarantees or warranties of any kind are made as to its accuracy, suitability to particulate applications due to variations in methods, conditions and equipment. When PT.INDOWIJAYA SAKTI TEGUH provides information and service involving skill, assistance, judgment, recommendations, and or advise this is done on the best of our knowledge only; information is not be relied upon.

Full scale testing and performance of the product is the responsibility of the end user. For further information or classification of certain points to ensure that the user has made a proper assessment and reasonable precautions have been applied, please contact PT.INDOWIJAYA SAKTI TEGUH.