

IDENTIFICATION

Product Name : UltraSORB[®] Swab

Company : Foamtec International Co., Ltd.

Branch 3 : 111/1 Moo 2, Phahonyothin RD. KM. 56 Tambol Lamsai
Amphur Wangnoi, Pranakornsriayutthaya 13170
Tel +66 35 740 717 Fax +66 35 740 744

Branch 6 : 259/1 Moo 3 Laem Chabang Industrial Estates
Thungsukhla, Sriracha, Chonburi 20230
Tel.: +66 33 678 877 Fax.: +66 33 678 876

Material 1 : **Polypropylene Homopolymer Pellets**

1.1 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE : Translucent to white solid pellets.

IMMEDIATE CONCERNS : Spilled material may present a slipping hazard. This product as shipped is not classified as a combustible dust; however, a combustible concentration of dust may occur if fines are suspended in air. Avoid contact with strong oxidizing agents. When working with the material at temperatures above the melting point, the material will begin to decompose producing fumes that can contain carbon dioxide, carbon monoxide, ketones, acrolein, aldehydes and other unidentified organic compounds that come from the breakdown of the material. Adequate room and extruder ventilation should be provided to minimize exposures.

POTENTIAL HEALTH EFFECTS

EYES : Process vapors may irritate eyes.

SKIN : Exposure to molten may resin cause thermal burns.

INGESTION : Not applicable.

INHALATION : Process vapors may cause respiratory tract irritation.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES : Irritation or redness.

SKIN : Not applicable.

INGESTION : Not applicable.

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INHALATION : Irritation of the nose, throat and respiratory tract.

ACUTE TOXICITY : Process vapors may cause eye and respiratory tract irritation.

CHRONIC : None known.

CARCINOGENICITY : None known.

MUTAGENICITY : None known.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS : None known.

TERATOGENIC EFFECTS : None known.

MEDICAL CONDITIONS AGGRAVATED : None known.

ROUTES OF ENTRY : Eye, Inhalation.

TARGET ORGAN STATEMENT : None known.

CANCER STATEMENT : This product is not considered to be a carcinogen by OSHA, IRAC or NTP.

IRRITANCY : Exposure to process vapors may cause eye and respiratory tract irritation.

SENSITIZATION : None known.

WARNING CAUTION LABELS : Burn risk - Avoid contact with molten resin. Explosion risk - Prevent accumulation of dust particles. Slipping risk - Keep walking surfaces free of spilled material. Vapor risk - Provide ventilation to avoid exposure to process vapors.

COMMENTS HEALTH : None.

HEALTH HAZARDS : Process vapors may cause eye and respiratory tract irritation.

PHYSICAL HAZARDS : Spilled material may present a slipping hazard. Exposure to molten resin may cause thermal burns.

1.2 COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS #</u>
Polypropylene Homopolymer	>95	9003-07-0
Stabilizers (trade secret)	<5	

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Material 1 : Polypropylene Homopolymer Pellets

1.3 FIRST AID MEASURES

EYES	: Flush eyes with water for 15 minutes. Get medical attention.
SKIN	: Molten resin - If molten material comes in contact with the skin, cool under ice water or a running stream of water. DO NOT attempt to remove the material from the skin. Removal could result in severe damage. Get medical attention.
INGESTION	: Not applicable.
INHALATION	: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
ANTIDOTES	: Not applicable.
NOTES TO PHYSICIAN	: None.
ADDITIONAL INFORMATION	: None.

1.4 FIRE - FIGHTING MEASURES

AUTOIGNITION TEMPERATURE	: Not determined.
EXTINGUISHING MEDIA	: Use foam, carbon dioxide, or water spray when fighting fires involving this material.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide, carbon monoxide, ketones, acrolein, aldehydes, unidentified organic compounds.
EXPLOSION HAZARDS	: Product as shipped is not a combustible dust. However, a combustible concentration of dust may occur when fines are suspended in air.
FIRE FIGHTING PROCEDURES	: Standard procedure for Class A fires.
FIRE FIGHTING EQUIPMENT	: As in any fire, water self-contained pressure demand breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.
SENSITIVE TO STATIC DISCHARGE	: Static discharge could be an ignition source for a combustible concentration of dust.
SENSITIVITY TO IMPACT	: Not applicable.

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1.5 ACCIDENTAL RELEASE MEASURES

- SMALL SPILL** : Sweep up material and place in a disposal container.
- LARGE SPILL** : Vacuum or sweep up material and place in a disposal container.
- ENVIRONMENTAL PRECAUTIONS**
- WATER SPILL** : Keep pellets out from waterways.
- LAND SPILL** : Not yet determined.
- GENERAL PROCEDURES** : Vacuum or sweep up material and place in a disposal container.
- SPECIAL PROTECTIVE EQUIPMENT** : None.

1.6 HANDLING AND STORAGE

- GENERAL PROCEDURES** : Keep away from heat, sparks and flame.
- HANDLING** : Ground and bond containers when transferring material.
- STORAGE** : This product may react with strong oxidizing agents and should not be stored near such materials. Store boxed and bags of material in areas protected with automatic sprinklers.
- STORAGE TEMPERATURE** : 60°C (140°F) maximum.
- STORAGE TEMPERATURE NOTES** : Stored in a cool place below 60 °C, 140 °F.
- ELECTROSTATIC ACCUMULATION HAZ** : Material may accumulate static charges during transfers. Ground and bond containers when transferring material.

1.7 EXPLOSURE CONTROLS AND PERSONAL PROTECTION

- ENGINEERING CONTROLS** : Provide adequate room ventilation. Provide adequate ventilation at the extruder to minimize exposure to process vapors. Eliminate ignition sources during repair and maintenance operations.
- PERSONAL PROTECTIVE EQUIPMENT**
- EYES AND FACE** : Wear safety glasses with side shields.
- SKIN** : When handling or processing resins at elevated temperatures or in a molten state, wear protective clothing over the skin to prevent contract.

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- RESPIRATORY** : A respiratory protection program that meets OSHA 1910.134, ANSI Z88.2 and/or CSA Z94.4-93 requirements must be followed whenever workplace conditions warrant use of a respirator.
- PROTECTIVE CLOTHING** : When handling or processing resins at elevated temperatures or in a molten state, wear protective clothing over the skin to prevent contract.
- OTHER USE PRECAUTIONS** : Eyewash fountains and safety showers should be easily accessible.

1.8 PHYSICAL AND CHEMICAL PROPERTIES

- PHYSICAL STATE** : Solid.
- ODOR** : Slightly waxy odor.
- APPEARANCE** : Pellet.
- COLOR** : Translucent to white.
- MELTING POINT** : >120°C (248°F)
- SPECIFIC GRAVITY** : 0.88 TO 0.92
- COMMENTS**
- PERCENT VOLATILE** : < 0.4%
- WATER SOLUBILITY** : Negligible.

1.9 STABILITY AND REACTIVITY

- STABLE** : Yes.
- HAZARDOUS POLYMERIZATION** : No.
- CONDITIONS TO AVOID** : Keep away from heat, sparks and flame.
- POLYMERIZATION** : Product will no undergo polymerization.
- HAZARDOUS DECOMPOSITION PRODUCT** : At elevated temperature the material will begin to decompose, producing fumes that can contain carbon dioxide, carbon monoxide, ketones, acrolein, aldehydes, unidentified organic compounds.
- INCOMPATIBLE MATERIALS** : Oxidizing materials.

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1.10 TOXICOLOGICAL INFORMATION

NOT APPLICABLE

1.11 ECOLOGICAL INFORMATION

NOT APPLICABLE

1.12 DISPOSAL CONSIDERATIONS

NOT APPLICABLE

1.13 TRANSPORT INFORMATION

NOT APPLICABLE

1.14 REGULATORY INFORMATION

NOT APPLICABLE

1.15 OTHER INFORMATION

NOT APPLICABLE

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Material 2 : Irgastat Conductive Polymer

2.1 HAZARDS IDENTIFICATION

NOT APPLICABLE

2.2 COMPOSITION / INFORMATION ON INGREDIENTS

Substances presenting a health or environmental hazard

CAS Number	Product Name	Content	Symbol(s)	R-Phraso(s)
007791-07-3	Sodium-perchlorate	< 5%	O - Xn	R09-R22

2.3 FIRST AID MEASURES

SKIN CONTACT	: Wash off with soap and plenty of water. Do not use organic solvents.
EYE CONTACT	: Rinse immediately with plenty of water for at least 15 minutes. In case of eye irritation, seek medical attention.
INHALATION	: Move to fresh air. In case of prolonged exposure, seek medical attention. In case of indisposition, seek medical attention. In case of irritation of respiratory system of mucous membranes, seek medical attention.
INGESTION	: Immediately give plenty (> 500 ml) of water (if possible charcoal slurry). In case of spontaneous vomiting be sure that Vomitus can freely drain due to danger of suffocation. Give water repeatedly. Artificial induction of vomiting should be restricted to first aid staff. Give nothing by mouth in cases of unconsciousness or convulsion. Seek medical advice.

2.4 FIRE - FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA : Water spray, Carbon dioxide (CO₂), Foam, Dry powder.

EXTINGUISHING MEDIA WHICH MUST NOT BE USED FOR SAFETY REASONS

: High volume water jet.

EXPOSURE HAZARDS

Contaminated water from fire hoses or sprinklers, etc., must be prevented from draining into watercourses, sewers, or the ground water. Sufficient measures must be taken to retain water used of extinguishing. Contaminated water and soil must be disposed of in conformity with local regulations.

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Material 2 : Irgastat Conductive Polymer

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

: Wear full protective clothing. Wear self-contained breathing apparatus.

COMBUSTION PRODUCTS

: Oxides of carbon; Oxides of nitrogen (NOX); Oxides of phosphorus; Toxic gases/vapours.

2.5 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

: Do not breathe vapours/dust. Remove all sources of ignition. Avoid contact with skin, eyes and clothing.

ENVIRONMENTAL PRECAUTIONS

: Do not flush into surface water, sanitary sewer or ground water system.

METHODS FOR CLEANING UP

: Use mechanical handling equipment. Collect the spilled product into suitable containers, which must be tightly sealed and properly labelled. Avoid dust formation.

2.6 HANDLING AND STORAGE

HANDLING

: Avoid dust formation and ignition sources. Ensure good local exhaust ventilation. Do not eat, drink or smoke at the workplace.

STORAGE

: Keep away from food and drink. Store in the original container securely closed.

2.7 EXPLOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMIT(S)

: CIEL-TWA Ciba internal exposure limit (8 hour time weighted average) no tested.

TECHNICAL MEASURES / PRECAUTION

: No special precautions required.

RESPIRATORY PROTECTION

: Effective dust mask.

HAND PROTECTION

: Protective gloves.

EYE PROTECTION

: Suitable goggles or face protection.

SKIN AND BODY PROTECTION

: Working clothes, Closed footwear.

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Material 2 : Irgastat Conductive Polymer

2.8 PHYSICAL AND CHEMICAL PROPERTIES

FORM	: Pastilles.
COLOUR	: White.
ODOUR	: Odourless.
MELTING/FREEZING TEMPERATURE	: 170 - 180 °C.
BOILING POINT/RANGE	: Not applicable.
OXIDISING PROPERTIES	: Not oxidizing.

2.9 STABILITY AND REACTIVITY

DECOMPOSITION TEMPERATURE	: Not tested.
CONDITIONS TO AVOID	: Static discharges.
MATERIALS TO AVOID	: Strong acids, strong bases and strong oxidising agents.
HAZARDOUS DECOMPOSITION PRODUCTS	: Oxides of carbon, Oxides of phosphorus, Oxides of nitrogen (Nox), Hydrogen chloride, Toxic gases/vapours.
FURTHER INFORMATION	: In contact with oxidisable material sodium perchlorate may explode when ignited.

2.10 TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY	LD50 > 2000 mg/kg	EEC 88/379
Rat		Conventional Method
ACUTE DERMAL	Not irritant	EEC 88/379
IRRITATION/CORROSION		Conventional Method
Rabbit		
ACUTE EYE IRRITATION/CORROSION	Not irritant	EEC 88/379
Rabbit		Conventional Method
ACUTE SKIN SENSITISATION	Not sensitising	EEC 88/379
Guinea pig		Conventional Method

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2.11 ECOLOGICAL INFORMATION

NOT APPLICABLE

2.12 DISPOSAL CONSIDERATIONS

NOT APPLICABLE

2.13 TRANSPORT INFORMATION

NOT APPLICABLE

2.14 REGULATORY INFORMATION

NOT APPLICABLE

2.15 OTHER INFORMATION

NOT APPLICABLE

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Material 3 : Flexible Polyurethane foam

3.1 HAZARD IDENTIFICATION

ROUTES OF ENTRY : Inhalation - Foam dust

HEALTH HAZARDS : Coares dust can cause mechanical irritation of lungs and eyes.
Airbone dust is evaluated as a nuisance dust. If ignited foam may decompose and emit toxic gases and respiratory.

CARCINOGENICITY

NTP : None

IARC MONOGRAPHS : No

OSHA REGULATED : No

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE : None Known

EMERGENCY FIRST AID PROCEDURES

INHALATION : Remove to fresh air, contact physician if respiratory discomfort persists.

EYES : Flush eyes thoroughly with water for 15 minutes.

SKIN : None necessary

INGESTION : None necessary

3.2 COMPOSITION / INFORMATION ON IDENTIFICATION

NOT APPLICABLE : No established OSHA Permissible Exposure Limit or ACGIH threshold Limit Value.

Foamtec Polyurethane foam is a fully cross-linked reaCtion product of Polyhydroxy polyol, toluene di isocyanate, catalysts, surfactant, pigment and water. Polyurethane foam product is a polymeric material consisting of repeating units of carbon, hydrogen, oxygen and nitrogen.

3.3 FIRST AID MEASURES

NOT APPLICABLE

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Material 3 : Flexible Polyurethane foam

3.4 FIRE - FIGHTING MEASURES

FLASH POINT : Decomposition products flash at 500 °F

FLAMMABLE LIMITS : Not applicable

UEL : Not applicable

LEL : Not applicable

CLASSIFICATION : Combustible Solid

NFPA SPRINKLER CLASSIFICATION : Extra Hazard

EXTINUISHER MEDIA : Dry Chemical, Water, Carbondioxide

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus in enclosed areas.

UNUSUAL FIRE & EXPLOSION HAZARD!: If ignited, foam can produce rapid flame spread, intense heat, dense black smoke. Accumulated polyurethane dust can be readily ignited and presents a fire risk. High concentrations of dust in the air can explode if explode to a flame, spark or other ignition oxidizing sources.

3.5 ACCIDENTAL RELEASE MEASURES

NOT APPLICABLE

3.6 HANDLING AND STORAGE

STEP TO BE TAKEN IN CASE : No special response required ---sweep up.

MATERIALS IS RELEASED OR SPILLED WASTE DISPOSAL METHOD

: Federal, state and local authorities should be contacted before attempting any form of disposal.

SAFE HANDLING AND STORAGE : Warehousing of bun stock, sheets, rolls, and fabricated items should be stored under a fusible sprinkler system with a minimum of six feet clearance between stacks of foam and the sprinkler heads.

Do not store foam near any ignition sources such as exposed electrical or

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gas heating elements, open flames and exposed lights. Donot smoke in foam storage areas. Do not allow foam scrap and cuttings to accumulate and maintain clear aisles with adequate access to all storage areas and exits.

OTHER PRECAUTIONS : Notify local fire companies of presence of large quantities of foam.

3.7 EXPOSURE CONTROLS AND PERSONAL PROTECTION

VENTILATION : Local exhaust ventilation is recommended for this processing procedures which may generate foam dust and decomposition products. Examples of these processes include sawing, grinding, buffing and flame lamination, hot wire cutting, heat sealing and hot stamping.

RESPIRATORY PROTECTION : Should be selected based on identity and concentration of air contaminant. Only NIOSH-approved respirators for protection against the air contaminant of concern should be used.

EYE PROTECTION : Recommended for those processing operations which may generate dust.

3.8 PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT : Not applicable

MELTING POINT : 350 - 375 °F

VAPOR PRESSURE (mmHg) : Not applicable

VAPOR DENSITY : Not applicable

DENSITY : 1.1 - 20 lbs/cfc

EVAPORATION RATE : Not applicable

SOLUBILITY IN WATER : Insoluble

APPEARANCE AND ODOR : Uniform cellular solid structure of varying colors with slight characteristic odor.

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Material 3 : Flexible Polyurethane foam

3.9 STABILITY AND REACTIVITY

STABILITY CONDITIONS TO AVOID INCOMPATIBILITY HAZADOUS DECOMPOSITION PRODUCT

: Stable

High temperature, open flames; strong oxidizers (i.e. hypochlorites)

Strong oxidizing acids - will degrade.

PRODUCTS : CO, acetaldehyde, acrylonitrile, polymer fragments, oxides of nitrogen and hydrogen cyanide.

HAZARDOUS POLYMERIZATION : Will not Occur.

3.10 TOXICOLOGICAL INFORMATION

Based on extensive history of use, product is considered generally non-toxic, non-irritating and with little or no potential for allergic reactions. Some foams (particularly those intended for toy use) have been tested for acute eye, skin and ingestion toxicity per 16CFR 1500.3, 1500.40 and 1500.42 (animal toxicity) with no evidence of acute toxicity. Some foams have been tested for human skin irritation (sensitization) with no evidence for sensitizing potential. Foam is generally not recommended for contact with open wounds or for internal use where extractable may be absorbed into the body unless appropriate testing has been done.

3.11 ECOLOGICAL INFORMATION

CHEMICAL FATE INFORMATION : Biodegradation will occur slowly in the presence of light and air.

3.12 DISPOSAL CONSIDERATION

NOT APPLICABLE

3.13 TRANSPORT INFORMATION

SUGGESTED SHIPPING NAME : Flexible Polyurethane Foam (Not currently regulated by DOT).

HAZARD CLASS : Not applicable

HAZARD ID : Not applicable

UN/NA : Not applicable

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3.14 REGULATORY INFORMATION

FEDERAL REGULATIONS

TSCA : All components are listed. There is no listing for the finished polymer.

OSHA : Defined as article (29CER 1910.1200)

CERCLA : Not reportable.

SARA TITLE III

311/312 Hazard Categor: None

CLEAN AIR ACT : No ozone depleting emissions.

INTERNATIONAL REGULATION

CANADIN WHIMS : Defined as manufactured article.

EUROPEAN (ECC) : None Known.

STATE REGULATION

CALIFORNIA : Although some ingredients used in the manufacture of foam require listing under Proposition 65, they are not present in sufficient quantity in the finished product to require listing, (Also consider implications of water spills and fire run off).

OTHER STATES : None Known.

3.15 OTHER INFORMATION

Flexible polyurethane foam, like all organic materials, will burn if exposed to a sufficient heat source.

The ignition temperature of polyurethane foam will vary depending on the product chemical formulation, but all polyurethane foam are combusible and can create a fire risk. Flexible polyurethane foams, once ignited, may degrade and melt to a combustible liquid which may add to the fire involvement.

Term such as "fire retardant", "slow burning" and "flame resistant" describe certain flammability properties and should not be regarded as denoting fire safety under all conditions. Small scale fire tests are not intended to reflect hazards presented by these or any other material under real fire conditions.

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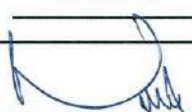

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Material 3 : Flexible Polyurethane foam

Thermal decom decomposition products from polyurethane foams can be toxic and present a risk to humans who are exposed. This is true for all organic materials. Fire risks in varying degrees are common to all fires: heat, carbon monoxide, other toxicants, oxygen depletion and smoke. In fires involving polyurethane foam, particularly flexible foams, large quantities of dense smoke can be generated quickly.

Personnel involved in fire fighting should wear self-contained breathing apparatus and be aware of the exposure to toxic and potentially lethal gases. Standard fire-fighting equipment generally employed by authorized firemen is mandatory.

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Issued By : <u>Manchai B.</u> (Engineer)	Checked By :  (Engineering Manager)	Approved By :  (Sr.Mgr / GM.)