



MATERIAL SAFETY DATA SHEET

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1.IDENTIFICATION**PRODUCT DETAILS**

PRODUCT NAME: P5016S

TRADE NAME: P5016S

PRODUCT USE: POLYESTER RESIN

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2.HAAARDS IDENTIFICATION:

Hazard classification: Not classified

GHS label element, including precautionary statements

Signal word: No signal word.

Hazard statements: No known significant effects or critical hazards.

Precautionary statements:

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Other hazards which do not result in classification: fine dust clouds may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

3 .COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture: Mixture

Other means of identification: Not available.

CAS number/other identifiers

CAS number: 25135-73-3

EC number: Mixture.

Product code: P9590

Ingredient name	Common name	CAS number	%
phosphonium bromide and mixtures which contain 25% or more	Ethyltriphenylphosphonium bromide	1530-32-1	<1

4.FIRST AID MEASURES

EYES:In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

SKIN: In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. If irritation persists, get medical attention. Remove contaminated clothing and shoes.

Wash clothing before reuse. Thoroughly clean contaminated shoes.

INGESTION: If swallowed, get medical attention immediately. Do not induce vomiting.

INHALATION: If affected by inhalation, move victim to fresh air. If symptoms persist, seek medical attention.

NOTE TO PHYSICIANS:No data is available.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: use dry chemical powder.

UNSUITABLE EXTINGUISHING MEDIA: Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: May form explosible dust-air mixture if dispersed.

HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: No specific data.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus with a full face-piece operated in positive pressure mode.

SPECIAL PRECAUTIONS FOR FIRE-FIGHTERS: 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 risk. Use water spray to keep fire-exposed containers cool.

REMARK: Fine dust clouds may form explosive mixtures with air.

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 flame in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

ENVIRONMENTAL PRECAUTIONS:Avoid dispersal of spilt material and runoff and contact with soil, waterway, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

SMALL SPILL: Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

LARGE SPILL: 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 area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Put on appropriate personal protective equipment. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition, Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Store in accordance with local regulations. Store in segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible material, Eliminate all ignition sources. Separate from oxidizing material. Keep container tightly closed and sealed until

ready for use. Container that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in original container, protected from direct sunlight.

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS

OCCUPATIONAL EXPOSURE LIMITS

Ingredient name	Exposure limits
Not available	

APPROPRIATE ENGINEERING CONTROLS: Use only with adequate ventilation. If user operations generate dust,fumes,gas,vapour or mist,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.

ENVIRONMENT 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 ,fillers or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

PERSONAL PROTECTIVE EQUIPMENT:



RESPIRATORY PROTECTION: Required for dusts and fume conditions.



SKIN PROTECTION: Use neoprene or other nonporous gloves. Neoprene or plastic apron and protective clothing covering exposed skin areas.



EYE PROTECTION: Avoid contact with eyes. Wear goggles if there is a likelihood of Contact with eyes. Eyewash stations and safety showers should be readily available in handling areas. Use safety eyewear with perforated side shields.

HYGIENIC PRACTICES: Wash hands thoroughly before eating and using washroom.

Remove contaminated clothing immediately and do not wear again until it has been properly laundered.

9.PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Flakes**COLOR:** Transparent**ODOR:** Odorless**MELTING:** Not available**BOILING:** Not available**FIRE POINT:** Not available**SPECIFIC GRAVITY:** 1.20g/cm³**SOLID CONTENT:** 100.0 %**10. STABILITY AND REACTIVITY****CHEMICAL STABILITY:** The product is stable.**CONDITIONS TO AVOID:** Avoid the creation of dust when handling and avoid all possible sources of ignition.**INCOMPATIBILITY:** Reactive or incompatible with the following materials: Oxidizing materials..**HAZARDOUS POLYMERIZATION:** Will not occur**11. TOXICOLOGICAL INFORMATION****INFORMATION ON LIKELY ROUTES FO EXPOSURE:** Not available.**POTENTIAL ACUTE HEALTH EFFECTS:****INHALATION:** exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.**INGESTION:** No known significant effects or critical hazards.**SKIN CONTACT:** No known significant effects or critical hazards.**EYE CONTACT:** exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eye.**OVER-EXPOSURE SIGNS/SYMPTOMS:****INHALATION:** Adverse symptoms may include the follow: respiratory tract irritation, coughing.**INGESTION:** No specific data.**SKIN CONTACT:** No specific data.**EYE CONTACT:** Adverse symptoms may include the follow: irritation, redness.**HEALTH HAZARDS****ACUTE TOXICITY:**

Product/ ingredient name	Result	Species	Dose	Exposure
phosphonium bromide and mixtures which contain 25% or more	LD50 dermal	Rate	>2000mg/kg	-
	LD50 Oral	Rate	200mg/kg	-
	LD50 Oral	Rate	300 to 500 mg/kg	-

IRRITATION/CORROSION

Product/ ingredient name	Result	Species	Score	Exposure	Observation
phosphoni- um bromide and mixtures	Skin-primary dermal irritation index	Rabbit	2.16	-	-

which contain 25% or more	Eyes-severe irritant	Rabbit	-	-	-
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SENSITISATION

Product/ingredient name	Route of exposure	Species	Result
Not available			

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Not available			

Not available

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Not available						

Teratogenicity

Not available.

Specific target organ toxicity(single exposure)

Not available.

Specific target organ toxicity(single exposure)

Not available.

Aspiration hazard

Not available.

Potential chronic health effects**Chronic toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
Ethyltriphenyl phosphonium bromide and mixtures which contain 25% or more	Sub-acute LOAEC Inhalation Dusts and mists Sub-chronic LOEL Oral	Rat-Male, Female Rat	347mg/kg	- 6 hours/day;5days per week -

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation**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.**ATE value**

Route	Result
Oral	66666.7mg/kg

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

Product/ingredient name	Result	Species	Exposure
Ethyltriphenyl phosphonium bromide and mixtures which contain 25%or more	Acute LC50 24.625mg/l Fresh water	Daphnia	48 hours
	Acute CL50>39.54mg/l Fresh water	Fish-Danio rerio	96 hours

B. Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Not available				

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ethyltriphenyl phosphonium bromide and mixtures which contain 25%or more	-	-	Not readily

C. Bioaccumulative potential

Product/ingredient name	Log _p ow	BCF	Potential
Ethyltriphenyl phosphonium bromide and mixtures which contain 25%or more	-0.446	-	low

D. Mobility in soil

Soil/water partition :Not available

Coefficient(K_{oc})

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

13.DISPOSAL CONSIDERATIONS

A. 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 non-recyclable 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.

B. Disposal precautions :This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and

runoff and contact with soil, waterways, drains and sewers.

14. TRANSPORT INFORMATION

	UN	IMDG	LATA
A. UN number	Not regulated.	Not regulated.	Not regulated.
B. UN proper shipping name	-	-	-
C. Transport hazard class(es)	-	-	-
D. Packing group	-	-	-
E. Environmental hazards	No.	No.	No.
F. Additional information	-	-	-

Special precautions for user: Transport within user is 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.

15. REGULATORY INFORMATION

A. Regulation according to ISHA

ISHA article 37(Harmful : None of the components are listed.

substances prohibited from manufacture)

ISHA article 38 (Harmful : None of the components are listed.

substances requiring permission)

Article 2 of Youth : Not applicable.

Protection Act on Substances Hazardous to Youth

Exposure Limits of Chemical Substances and Physical Factors

None of the components are listed.

ISHA Enforcement Regs : None of the components are listed.

Annex 11-3 (Exposure standards established for harmful factors)

ISHA Enforcement Regs : None of the components are listed.

Annex 11-4 (Harmful factors subject to Work Environment Measurement)

ISHA Enforcement Regs : None of the components are listed.

Annex 12-2 (Harmful

Factors Subject to

Special Health Check-up)

Standard of Industrial

Safety and Health Annex

12 (Hazardous

: None of the components are listed.

substances subject to control)

B. Regulation according to Chemicals Control Act

- K-Reach Article 20 (Toxic chemicals) : Not applicable
 K-Reach Article 27(Prohibited) :None of the components are listed.
 K-Reach Article 27(Restricted) :None of the components are listed.
 CSCA Article 11 (TRI) :None of the components are listed.
 Korea inventory :Not determined.
 CSCA Article 39(Accident Precaution Chemicals) : None of the components are listed.

C. Dangerous Materials Safety Management Act : Not available.

D. Wastes regulation : Dispose of contents and container in accordance with all local international regulations.

D. Regulation according to other foreign laws

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals
 Not listed.

Montreal Protocol (Annexes A, B, C, E)
 Not listed.

Stockholm Convention on Persistent Organic Pollutants
 Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)
 Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
 Not listed.

16. OTHER INFORMATION

- A. References** :Not available.
- B. Date of issue/Date of revision** : 08/26/2020
- C. Version** :1
Date of printing :08/26/2020
- D. Other**
- Key to abbreviations** : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

**UN = United Nations****Notice to reader**

To the best of our knowledge, the information contained herein is accurate .However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

The information contained in the Safety Data Sheet is based on our data available on the date of publication. The information is intended to aid the user in controlling the handling risks, it is not to be construed as a warranty or specification of the product quality .The information may not be or may not altogether be applicable to combinations of the product with other substances or to particular applications.

The user is responsible for ensuring that appropriate precautions are taken and for satisfying themselves that the data are suitable and sufficient for the products intended purpose. In case of any unclarity we advise consulting the supplier or an expert.