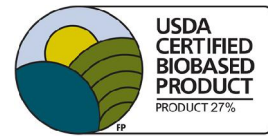




# MATERIAL SAFETY DATASHEET



## SECTION 1: Product And Company

### Identification

Company Name: **BIOSTARCH company limited**  
 Company Add: 50 Dong Van Cong Str, Thanh My Loi Ward, 2 Dist, Ho Chi Minh City Vietnam  
 Phone Number: (+84) 916 697 667  
 Email: info@biostarch.vn

Product Name: **BIO40E**  
 Synonymous Name:  
 Formula:  $-(CH_2-CH_2)_n - (C_6H_5O)_n$

MW:  
 CAS NO: N/A

## SECTION 2 : Composition /information on ingredients

Ingredient	CAS No.	Percent (%)
Polyethylene		~ 60
Starch		~ 40
Additive		secret information
Coupling agent		secret information

## SECTION 3: Hazards Identification

**EMERGENCY CASE:** skin burned when contacted with melted product

**MEDICAL POTENTIAL EFFECT:** At processing temperatures above 325 deg C, fumes irritating to the eyes, nose and throat may be evolved. Exposure may result in redness, itching and tearing of the eyes and soreness in the nose and throat together with coughing.

**SKIN CONTACT:** No data are available. However, based on experience with handling these polymers, no unusual dermatitis problem is expected from routine handling. Molten polymer contacting the skin will cause thermal burns.

**EYE CONTACT:** Mechanical irritation only.

**INGESTION:** Not a probable route of exposure. Toxicity is predicted to be low.

**CANCER EFFECT:** No data are available

## SECTION 4 First Aid Measures

First Aid

**INHALATION:** If exposed to fumes from overheating or combustion, move to fresh air. Consult a physician.

**EYE CONTACT:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**SKIN CONTACT:** The compound is not likely to be hazardous by skin contact but cleansing the skin after use is advisable. If molten material gets on skin, cool rapidly with cold water. Do not attempt to remove material from skin. Obtain medical treatment for thermal burn.

**INGESTION:** If vomiting occurs, keep head lower than hips to prevent severe nausea. Consult a physician if necessary.

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## **SECTION 5 Fire Fighting Measures**

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### **Flammability**

- Ignition point: not applicable
  - Method used: Not applicable
  - Flammable limits:
    - LEL: Not applicable
    - UEL: Not applicable
- Dust air mixtures may ignite or explode, so the dust should not be stored to avoid any potential hazards that may cause the toxic dust caused by explosions
- **Fire Extinguishing media:** Water spray, foam making regular, dry chemical or carbon dioxide.
  - Guidelines for fire: Bring all the equipment including a tunnel positive pressure self-contained breathing apparatus in any closed the fire space

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## **SECTION 6 Accidental Release Measures**

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### **Safeguards (Personnel)**

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

### **Spill Clean Up**

Sweep up to avoid slipping hazard.

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## **SECTION 7 Handling And Storage**

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**Handling:** Case of processing of melting polymer, use protective gloves and safety glasses. Avoid contact with eyes. Avoid breathing dust. Container transport using mud and soil when transferring material to prevent dust explosions. Minimize the layer and dust accumulation

**Storage:** Preserved in a dry place away from ignition sources and excess heat.

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## **SECTION 8 Exposure Controls/Personal Protection**

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**Airborne exposure limits:** None

**Ventilation System:** In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

**Personal respirators (NIOSH approved):** For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (E.g. Lubricants, cutting fluids, glycerin, etc) are present, use a NIOSH type R or P filter.

For emergencies or instances where the exposure levels are not known, use a full face positive pressure, air-supplied respirator.

Warning: air-purifying respiration does not protect workers in oxygen-deficient atmosphere.

**Skin protection:** wear protective gloves and clean body-covering clothing.

**Eye Protection:** use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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## SECTION 9 Physical And Chemical Properties

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Product's Parameter	BIO40E plastic resin
Main components	Polyethylene and starch
Starch content	40%wt
Morphological	Light yellow circular cylinder pellets
Smell	Light smell of starch, no irritation
Density follows ASTM D792 standard	~ 1,08g/cm <sup>3</sup>
Humidity at 150°C, measured in 3h	~ 0.7 %
Average thickness	0.015mm
Toxicity	Non-toxic (following part 313, title III of changed Amendments and Reauthorization law 1986 and 40 CFR part 372)
Starch content measured by TGA	39.87%
Processing temperature	155 - 160°C
MI, 230° C, 2.16kg	2.2 g/10 minutes
Carbon dioxide (CO <sub>2</sub> ) generated	2100mg/g compared with 3260mg/g of polyolefin
Impact resistance by the free falling – dart	32g

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## SECTION 10 Stability And Reactivity

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**STABILITY:** stable under ordinary conditions of use and storage

**HAZARDOUS DECOMPOSITION PRODUCTS:** sulfur or its oxide may form when heated to decomposition.

**HAZARD POLYMERIZATION:** not occur  
**CONDITIONS TO AVOID:** no information found

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## **SECTION 11 Toxicological Information**

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Material is not known to contain Toxic Chemicals and Heavy Metal under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372

Oral rat LD50: > 5000mg/kg

Others: no information

<b>Metals</b>	<b>Limit (ppm)</b>	<b>Content in sample (ppm)</b>
Ti	44	11
Cd	<18	Not detected
Zn	250	4
Fe	21	3
Cr	<8	Not detected
Cu	24	2
Co	9	1.9
Pb	<1.8	Not detected
Sr	10.4	0.5
Hg	<1	Not detected
As	2	0.2
Cr	<0.6	Not detected

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## **SECTION 12 Ecological Information**

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Environmental fate: no information found

Environmental toxicity: no information found

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## **SECTION 13 Disposal Considerations**

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Waste Services: Handling, transport, storage and disposal must comply with laws and regulations, state / provincial and local application.

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## **SECTION 14 Transport Information**

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Shipping Information

DOT

Proper Shipping Name : NA

Hazard Class : Not regulated

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## **SECTION 15 Regulatory Information**

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Chemical weapons: none

Poison schedule: none

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## **SECTION 16 Other Information**

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NFPA Rating: health: 1 Flammability: 0 Reactivity: 0

Label Hazard warning: Caution! May cause irritation to skin, eyes, and respiratory tract. May be harmful if swallowed or inhaled.

Label precautions: Keep container closed. Use with adequate ventilation , avoid breathing dust.