

Material Safety Data Sheet (MSDS)

1. Chemical Product and Company Identification

- A. Product name : HB Expanded Polypropylene Bead
B. General Properties : -
C. Hazard Classification : None

D. Recommended use : Auto Parts, Packaging Box etc
E. Information on manufacturer : Hanwha Advanced Materials America
1530 E. Front St. Monroe, MI 48161 US

F. Information on supplier/distributor : Same as above

G. Originated date : 20 December 2013

H. Revision number and final revision date : 2, 13 July 2015

2. Composition and Information on Ingredients

Compositions are typical values, not specifications

Component	Cas No	% Weight
Polypropylene	9010-79-1	95~99.8
Carbon Black	1333-86-4	3~5

3. Hazards Identification

- A. Acute Danger, Harmfulness Information : Not Applicable.
B. Effect to the eye : Not Available.
C. Effect to the skin : Not Available.
D. Effects of Inhalation : May cause harmful effects when dust is inhaled.
E. Effects of Ingestion : Not Available.
F. Chronic Symptoms/Effects : Not Available.

4. First Aid Measures

- A. Eye Contact : In case of dust contact, flush eyes with plenty of water.
- B. Skin Contact : None.
- C. Inhalation : Remove to fresh air.
- D. Ingestion : Seek immediate medical attention (Contacting a doctor is recommended).
- E. Doctor's Advice : There is no antidote in particular
(Give functional treatment according to the symptoms).

5. Fire-Fighting Measures

- A. Ignition Point : Temperature over 340°C
- B. Auto-Ignition Point : Temperature over 340°C
- C. Min/Max Flash Point : Not Available.
- D. Classification and Regulation according to the Fire Services Act : Inflammable synthetic resins
- E. Extinguishing Media : Water, Carbon Dioxide, Powder Extinguishant.
- F. Fire Fighting Instructions and media : Wear front protection gear
Evacuate and remove explosive materials
- G. Hazardous Substances during combustion : It may contain carbon monoxide,
carbon dioxide, aldehyde, and carbonic oxides.
- H. Extinguishant that should not be used : Not Available.

6. Accidental Release Measures

- A. Personal Precautions : Nothing in particular.
- B. Environmental Precautions : Avoid drain by the sewers.
- C. Purification or Elimination Measures : Take to designated place and incinerate.

7. Handling and Storage

- A. Precautions for safe handling : Earthing is needed to prevent electric spark.
Remove causes of dust production.
- B. Storage : Store in accordance with current laws and regulations.

8. Exposure Controls and Personal Protection

- A. Engineering Controls : Separate from sources of ignition and heat.
Prevent electric spark.
- B. Respiratory Protection : Protection mask.
- C. Eye Protection : Goggles.
- D. Hand Protection : Not needed in general.
- E. Body Protection : Not needed in general.
- F. Health Precaution : Avoid dust inhalation.
- G. Exposure Standard : Not Available.

9. Physical and Chemical Properties

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| A. Physical State : Solid Bead Foam. | B. Odor : None. |
| C. pH : Not Applicable. | D. Solubility : Soluable in hot Decaline,
Tetrachloroethane, Tetrahydronaphthalene. |
| D. Boiling Point : Not Applicable. | E. Melting Point/Range : 130~150°C |
| F. Explosiveness : None. | G. Oxidization : None. |
| H. Vapor Pressure : Not Applicable. | I. Specific Gravity : 0.018-0.09 |
| J. Decomposition Coefficient :
Not Applicable | K. Vapor Density : Not Applicable. |
| L. Viscosity : Not Applicable. | M. Molecular Weight : Not Available. |

10. Stability and Reactivity Data

- A. Chemical Stability : Stable.
- B. Conditions and materials to avoid : Strong oxidizing agent, source of heat/ignition.
- C. Hazardous decomposition products : Irritating fume may be produced.
- D. Possibility of hazardous substances production upon reaction : Not Available.

11. Toxicological Information

- A. Acute oral toxicity : Not Available.
- B. Acute inhalation toxicity : Not Available.
- C. Sub-acute toxicity : Not Available.
- D. Chronic toxicity : Not Available.
- E. Mutagenicity : Not Available.
- F. Reproductive toxicity : Not Available.
- G. Carcinogenicity : Not Available.
- H. Etc. : Not Available.

12. Ecological Information

- A. Aquatic/Terrestrial toxicity : Not Available.
- B. Mobility in soil : Not Available.
- C. Persistence and degradability : Not Available.
- D. Bioaccumulative potential : Not Available.

13. Disposal Considerations

- A. Wastes Control Act Regulations : Not Available.
- B. Disposal methods : Incinerate or dispose under City, Province regulations.
- C. Disposal considerations : Obvserve environment related regulations upon disposal.

14. Transport Information

- A. Classification and regulations according to Ship Safety Act and IMDG Code :
Not Available.
- B. Transportation precautions : Avoid dust rises.
- C. Classification and regulations according to foreign transportation related laws :
Not Available

15. Regulatory Information

- A. Occupational Safety and Health Act regulations : Not Available.
- B. Regulations according to Toxic Chemicals Control Act and regulations according to chemical substances control by other authorities : Not Available.
- C. Other regulations by foreign laws : Not Available.

16. Other Information

- A. References and sources for data : -