

SAFETY DATA SHEET

Date Printed: 27 Apr, 2020

Version: 1

Regulation: According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

1. Identification

1.1 Product identifier

1.1.1 Product of name: CMBA-8240BK

1.1.2 Other means of identification: Not available

1.2 Recommended use of the chemical and restrictions on use

1.2.1 Recommended use: It is used for coating of cable.

1.2.2. Restrictions on use: Do not use for purposes other than those recommended.

1.3 Details of the supplier of the safety data sheet

1.3.1 Manufacturer

Company name: Hanwha Solutions Co, Ltd.

Address: Yeosu plant, Hanwha Solutions Co, Ltd., 117, Yeosusandan 3-ro, Yeosu-si, Jeollanam-do, Korea

Prepared by: W&C Production team

Contact Telephone: +82-61-688-1582, Fax: +82-61-688-1585, e-mail : h0500113@hanwha.com

1.3.2 Supplier & Distributor

Company name: Hanwha Solutions Co, Ltd.

Address: 21F, Hanwha Bldg., Janggyo-dong, Jung-gu, Seoul, Korea

Prepared by: W&C Sales Team

Contact Telephone: +82-2-729-2644, Fax : 02-729-2563, e-mail : yoosang.yoon@hanwha.com

1.4 Emergency phone number

Emergency phone: +82-2-729-2644

2. Hazard(s) identification

2.1 Classification of the substance or mixture

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Physical / Chemical Hazards: Not classified

Health Hazards: Not classified

Environmental Hazards: Not classified

2.2 Label elements, including precautionary statements

o **Pictogram and symbol:** Not applicable

o **Signal word:** Not applicable

o **Hazard statements:** Not applicable

o **Precautionary statements:**

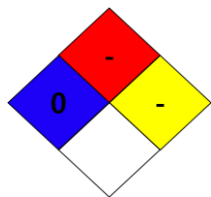
- **Prevention:** Not applicable

- **Treatment:** Not applicable

- **Storage:** Not applicable

- **Disposal:** Not applicable

2.3 Other hazard information not included in hazard classification (NFPA)



- **Health:** 0
- **Flammability:** Not available
- **Reactivity:** Not available

3. Composition/information on ingredients

| Component | Common name and synonyms | CAS No. | Conc. / % |
|---------------|-----------------------------|-----------|--------------|
| Polyethylene | Ethylene polymers | 9002-88-4 | 93 ~ 98 |
| Carbon black | Acetylene black | 1333-86-4 | Confidential |
| Zinc stearate | Octadecanoic acid zinc salt | 557-05-1 | < 0.1 |

4. First-aid measures

4.1 Description of first aid measures

Eye contact

- In case of contact with substance, immediately flush eyes with running water at least 20 minutes.

Skin contact

- In case of contact with substance, immediately flush skin with running water for at least 20 minutes.
- Remove and isolate contaminated clothing and shoes.
- Wash thoroughly clothes and shoes before reuse.
- Get immediate medical advice/attention.

Inhalation

- Specific medical treatment is urgent.
- Move victim to fresh air.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.

Ingestion

- Do not let him/her eat anything, if unconscious.
- Get immediate medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

- None known

4.3 Indication of immediate medical attention and notes for physician

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-fighting measures

5.1 Extinguishing media

- **Suitable extinguishing media:** Dry chemical, carbon dioxide, water, regular foam
- **Unsuitable extinguishing media:** Not available

5.2 Specific hazards arising from the chemical

- Thermal decomposition products: Halogenated compounds, carbon oxides, hydrogen chloride
- May be ignited by heat, sparks or flames.
- Containers may explode when heated.

- Some of these materials may burn, but none ignite readily.
- Fire may produce irritating and/or toxic gases.
- If inhaled, may be harmful.

5.3 Special protective equipment and precautions for fire-fighters

- Dike fire-control water for later disposal; do not scatter the material.
- Move containers from fire area if you can do it without risk.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Eliminate all ignition sources.
- Stop leak if you can do it without risk.
- Ventilate the area.
- Do not touch or walk through spilled material.
- Prevent dust cloud.

6.2 Environmental precautions

- Prevent entry into water ways, sewers, basements or confined areas.

6.3 Methods and materials for containment and cleaning up

- Small Spill; Flush area with flooding quantities of water. And take up with sand or other non-combustible absorbent material and place into containers for later disposal.
- Large Spill; Dike far ahead of liquid spill for later disposal.
- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

7. Handling and storage

7.1 Precautions for safe handling

- Please note that materials and conditions to avoid.
- Wash thoroughly after handling.
- Please work with reference to engineering controls and personal protective equipment.
- Be careful to high temperature.

7.2 Conditions for safe storage, including any incompatibilities

- Store in a closed container.
- Store in cool and dry place.

8. Exposure controls/personal protection

8.1 Occupational Exposure limits

< Polyethylene >

- o **ACGIH regulation:** Not available
- o **Biological exposure index:** Not available
- o **OSHA regulation:** Not available
- o **NIOSH regulation:** Not available
- o **EU regulation:**
 - Bulgaria: TWA=10mg/m³ (dust)
 - Czech Republic: TWA= 5mg/m³ (dust)
 - Latvia: TWA= 5mg/m³ (dust, listed under Polymers dust)
- o **Other:**
 - Slovak Republic: TWA=5mg/m³ (total solid aerosol)

- China: TWA= 5mg/m³ (total dust), STEL= 10mg/m³ (total dust)

< **Carbon black**>

o **ACGIH regulation:** TWA = 3 mg/m³ (inhalable particulate matter)

o **Biological exposure index:** Not available

o **OSHA regulation:** TWA=3.5 mg/m³

o **NIOSH regulation:** TWA=3.5 mg/m³; 0.1 mg/m³ (Carbon black in presence of Polycyclic aromatic hydrocarbons, as PAH)

o **EU regulation:**

- Belgium: TWA= 3.5mg/m³

- Denmark: TWA=3.5mg/m³

- Finland: TWA= 3.5mg/m³

o **Other:**

- Slovak Republic: TWA=2mg/m³ (respirable fraction, 5% or less fibrogenic component);

TWA=10mg/m³ (respirable fraction, greater than 5% fibrogenic component);

TWA=10mg/m³ (total aerosol)

- Malaysia: TWA=3.5mg/m³

- China: TWA=4mg/m³ (total dust), STEL= 8mg/m³ (total dust)

< **Zinc stearate**>

o **ACGIH regulation:** Not available

o **Biological exposure index:** Not available

o **OSHA regulation:** TWA=10 mg/m³ (total dust); 5 mg/m³ (respirable fraction)

o **NIOSH regulation:** TWA=10 mg/m³ (total dust); 5 mg/m³ (respirable dust)

o **EU regulation:**

- Finland: TWA= 10mg/m³

- France: TWA= 10mg/m³[VME]

- United kingdom: TWA=10 mg/m³ (inhalable dust); 4 mg/m³ (respirable dust)

STEL=20 mg/m³ (inhalable dust); 12 mg/m³ (calculated, respirable dust)

o **Other:**

- Vietnam: TWA=10mg/m³ (inhalable dust), 5mg/m³(respirable dust); STEL=20mg/m³ (inhalable dust)

- South Africa: TWA=10mg/m³ (total inhalable dust), 5mg/m³(respirable dust);

STEL=20mg/m³ (total inhalable dust, respirable dust)

- Kenya: TWA=10mg/m³ (total inhalable dust), 5mg/m³(respirable dust);

STEL= 20mg/m³ (total, inhalable dust)

8.2 Exposure controls

Appropriate engineering controls

- Provide local exhaust ventilation system or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Respiratory protection

- Wear NIOSH approved full or half face piece (with goggles) respiratory protective equipment when necessary.

Eye protection

- Wear facepiece with goggles to protect.

- An eye wash unit and safety shower station should be available nearby work place.

- Wear breathable safety goggles to protect from particulate material causing eye irritation or other disorder.

- An eye wash unit and safety shower station should be available nearby work place.

Hand protection

- Wear chemical resistant gloves.
- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.

Body protection

- Wear appropriate protective chemical resistant clothing.
- Wear appropriate protective clothing by considering physical and chemical properties of chemicals.

9. Physical and chemical properties
9.1 Information on basic physical and chemical properties
Appearance

| | |
|---|---------------|
| Description: | Solid, Pellet |
| Color: | Black |
| Odor : | Odorless |
| Odor threshold : | Not available |
| pH : | Not available |
| Melting point/freezing point : | 110~140 °C |
| Initial boiling point and boiling range : | Not available |
| Flash point : | Not available |
| Evaporation rate : | Not available |
| Flammability (solid, gas) : | Not available |
| Upper/lower flammability or explosive limits : | Not available |
| Vapor pressure : | Not available |
| Vapor density : | Not available |
| Relative density | 0.930-0.960 |
| Solubility : | Not available |
| Partition coefficient: n-octanol/water : | Not available |
| Auto-ignition temperature : | Not available |
| Decomposition temperature | Not available |
| Viscosity : | Not available |

“NOTE: The physical data presented above are typical values and should not be construed as a specification”

10. Stability and reactivity
10.1 Reactivity/Chemical stability/Possibility of hazardous reactions:

- Stable under normal conditions.
- No dangerous reaction under conditions of normal use.
- Fire may produce irritating and/or toxic gases.
- If inhaled, may be harmful.

10.2 Conditions to avoid:

- Heat, sparks or flames

10.3 Incompatible materials:

- Strong oxidizing agent

10.4 Hazardous decomposition products:

- Halogenated compounds, carbon oxides, hydrogen chloride

11. Toxicological information

| Information on toxicological effects | |
|--------------------------------------|--|
| (a) Acute toxicity | |
| Oral | Not classified (ATE _{mix} >5,000mg/kg bw) |
| | - Polyethylene: Rat, LD ₅₀ > 2,000 mg/kg - Carbon black: Rat, LD ₅₀ > 8,000 mg/kg - Zinc Stearate: Rat(female), LD ₅₀ =5,000mg/kg bw, no death(OECD TG 423, GLP) |
| Dermal | Not classified(ATE _{mix} >2,000mg/kg bw) |
| | - Zinc Stearate: Rabbit, LD ₅₀ >2,000mg/kg bw |
| Inhalation | Not classified(ATE _{mix} >50mg/L) |
| | - Zinc Stearate: Rat, LC ₅₀ (4h)>50 mg/L |
| (b) Skin Corrosion/ Irritation | Not classified |
| | - Polyethylene: In test on skin irritation with rabbits, mild skin irritations were observed. (irritating index: 0.2) - Carbon black: In test on skin irritation with rabbits, skin irritation was not observed. (OECD TG 404) - Zinc Stearate: In test on skin irritation with rabbits, the substance zinc distearate was found to be not irritating |
| (c) Serious Eye Damage/ Irritation | Not classified |
| | - Polyethylene: At the 24hour observation, one and two treated eyes suffered from moderate and minimal conjunctival irritation, respectively. Polyethylene produced a maximum group mean score of 11.7 and was classified as a mild irritant to the rabbit eye, all treated eyes appeared normal at the 72 hours and 7 day observations. - Carbon black: In test on eye irritation with rabbits, eye irritations were not observed. (OECD TG 405) - Zinc Stearate: When zinc distearate (100%) was applied into the un-rinsed eyes of 6 rabbits in two tests according to Draize, no irritation was observed. |
| (d) Respiratory sensitization | Not classified |
| | - Carbon black: In test on respiratory sensitization with mouse, respiratory sensitization was not observed. |
| (e) Skin Sensitization | Not classified |
| | - Polyethylene: In skin sensitization test with guinea pigs, skin sensitizations were not observed. - Carbon black: In skin sensitization test with guinea pigs, skin sensitizations were not |

| | |
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| | <p>observed. (OECD TG 406, GLP)</p> <p>- Zinc Stearate: The Substance Zinc Stearate was found to be not sensitizing when two eyeshadow formulation containing 10 % zinc stearate was applied twice a day for 28 days to 52 female panelists.</p> |
| (f) Carcinogenicity | Not classified |
| | <p>- Polyethylene: · IARC: Group 3(Not classifiable as to its carcinogenicity to humans)</p> <p>- Carbon black: · IARC: Group 2B(Possibly carcinogenic to humans) · ACGIH: A3(Confirmed animal carcinogen with unknown relevance to humans)</p> |
| (g) Mutagenicity | Not classified |
| | <p>- Polyethylene: · In vitro: Reverse mutation test (<i>S. typhimurium</i>) with and without metabolic activation: Negative · In vivo: Not available</p> <p>- Carbon black: · In vitro: Bacterial reverse mutation assay, ambiguous without metabolic activation/negative with metabolic activation (OECD TG 471, GLP) · In vivo: Sex-linked Recessive Lethal Test in <i>Drosophila melanogaster</i> (OECD TG 477): negative</p> |
| (h) Reproductive toxicity | Not classified |
| | <p>- Zinc Stearate: In one-generation study with rabbit, under the conditions of the test, administration of up to 60 mg/kg bw of unspecified zinc sulphate had no adverse effects on adult rabbits and their foetuses. (NOAELP=60 mg/kg bw/day)(read-across CAS No. 7733-02-0)</p> |
| (i) Specific target organ toxicity (single exposure) | Not classified |
| | <p>- Zinc Stearate: Zinc stearate was acutely irritating when injected into the lungs of rats and the peritoneum of guinea pigs. Examination of the lungs revealed severe edema, congestion, and small hemorrhages. Animals that survived demonstrated no abnormality of the lungs after 14 or 259 days.</p> |
| (j) Specific target organ toxicity (repeat exposure) | Not classified |
| | <p>- Polyethylene: Sub chronic or Pre chronic Exposure/ In a 90-day study, liver changes (fat droplets, cloudy swelling, and increased liver weight) that were considered reversible in all cases. (NOAEC=Rat: 2,700, 540ppm, dog: 2,700ppm)</p> <p>- Carbon black: In 90 days subchronic inhalation study with rat, there were no significant adverse effect. (NOAEC = 1.1mg/m³ air)(OECD TG 413)</p> <p>- Zinc Stearate: In a 28 days repeated dose toxicity study, significant changes were observed in absolute and relative weight of brain, adrenals, spleen, thymus, epididymides, heart, kidneys, ovaries, uterus and liver in 500 and 1000 mg/kg/day. In addition, minimal to mild gross pathological and histopathological changes were observed in liver, spleen and intestine. However, the biological significance of these findings are not related to</p> |

| | |
|-----------------------|---|
| | test chemical. (NOAEL=1,000 mg/kg bw/day (nominal))(OECD TG 407, GLP) |
| (k) Aspiration Hazard | Not available |

12. Ecological information

| | |
|------------------------------------|--|
| 12.1 Toxicity | |
| Acute toxicity | Not classified(ATE _{mix} =10.65mg/L) |
| | <ul style="list-style-type: none"> - Carbon black: <ul style="list-style-type: none"> · Fish: 96hr LC0(<i>Danio rerio</i>)=1,000mg/L (OECD TG 203, GLP) 96hr LC0(<i>Danio rerio</i>)=10,000mg/L (OECD TG 203, GLP) · Crustacean: 24hr EC50(<i>Daphnia magna</i>)>5,600mg/L (OECD TG 202, GLP) 48hr EC50(<i>Daphnia magna</i>)=33.08-41.97mg/L 48hr LC50(<i>Daphnia magna</i>)=54.55-68.23mg/L · Algae: 72hr EC₅₀(<i>Desmodesmus subspicatus</i>)>10,000mg/L (OECD TG 201, GLP) - Zinc Stearate: <ul style="list-style-type: none"> · Fish: 24hr LC₅₀(<i>Lepomis macrochirus</i>)≥1.8mg/L · Crustacean: 48hr EC₅₀(<i>Ceriodaphnia dubia</i>)=0.413mg/L (read-across CAS No. 7440-66-6) |
| Chronic toxicity | Not classified |
| | <ul style="list-style-type: none"> - Zinc Stearate: <ul style="list-style-type: none"> · Fish: 30d NOEC(<i>Cottus bairdi</i>)=0.172mg/L(read-across CAS No. 7440-66-6) · Crustacean: 3wk NOEC(<i>Daphnia magna</i>)=0.31mg/L (read-across CAS No. 7646-85-7) · Algae: 10d NOEC(<i>Fucus vesiculosus</i>)=0.1mg/L(growth rate) (read-across CAS No. 7646-85-7) |
| 12.2 Persistence and degradability | <ul style="list-style-type: none"> - Zinc Stearate: <ul style="list-style-type: none"> Persistence: Low persistency (log Kow is less than 4 estimated) (Log Kow=0.2695)(37°C, pH=5.53) |
| 12.3 Bioaccumulative potential | <ul style="list-style-type: none"> - Zinc Stearate: <ul style="list-style-type: none"> Bioaccumulation: Bioaccumulation is expected to be low according to the BCF < 500 (BCF = 3.162) |
| 12.4 Mobility in soil | Not available |
| 12.5 Hazardous to the ozone layer | Not classified |

13. Disposal considerations

Disposal method

Waste must be disposed of in accordance with federal, state and local environmental control regulation.

Disposal precaution

Consider the required attentions in accordance with waste treatment management regulation.

14. Transport information

14.1 UN No.: Not applicable

14.2 UN Proper shipping name: Not applicable

14.3 Transport Hazard classes:

ADR: Not applicable
IMDG: Not applicable
ICAO/IATA: Not applicable
RID: Not applicable

14.4 Packing group: Not applicable**14.5 Environmental hazards:** Not applicable**14.6 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable**14.7 Special precautions for user**

in case of fire: Not applicable
in case of leakage: Not applicable

15. Regulatory information**15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture**

< Polyethylene >

USA Regulatory Information

TSCA (Toxic Substances Control Act): Section 8 (b) inventory: Present [XU]

Proposition 65: Not regulated

OSHA Regulation: Not regulated

CERCLA Regulation: Not regulated

SARA 302 Regulation: Not regulated

SARA 304 Regulation: Not regulated

SARA 313 Regulation: Not regulated

Foreign Regulatory Information

Substance of Rotterdam] Protocol: Not regulated

Substance of Stockholm Protocol: Not regulated

Substance of Montreal Protocol: Not regulated

Foreign Inventory Status

- Korea management information: Existing Chemical Substance (KE-28877)
- Japan management information: Existing and New Chemical Substances (ENCS): Present ((6)-1))
- China management information: Inventory of Existing Chemical Substances (IECSC): Present (05721)
- Australia management information: Inventory of Chemical Substances (AICS): Present
- Canada management information: Domestic Substances List (DSL): Present
- New Zealand management information: Inventory of Chemicals (NZIoC): May be used as a single component chemical under an appropriate group standard.
- Philippines management information: Inventory of Chemicals and Chemical Substances (PICCS): Present

< Carbon black >

USA Regulatory Information

TSCA (Toxic Substances Control Act): Section 8 (b) inventory: Present

Proposition 65: Not regulated

OSHA Regulation: Not regulated

CERCLA Regulation: Not regulated

SARA 302 Regulation: Not regulated

SARA 304 Regulation: Not regulated

SARA 313 Regulation: Not regulated

Foreign Regulatory Information

Substance of Rotterdam] Protocol: Not regulated

Substance of Stockholm Protocol: Not regulated

Substance of Montreal Protocol: Not regulated

Foreign Inventory Status

- Korea management information: Existing Chemical Substance (KE-04682)
- European Inventory of Existing Commercial chemical Substances(EINECS) : Present(215-609-9)
- Japan management information: Existing and New Chemical Substances (ENCS): Present ((5)-5222, (5)-3328)
- China management information: Inventory of Existing Chemical Substances (IECSC): Present (34022)
- Australia management information: Inventory of Chemical Substances (AICS): Present
- Canada management information: Domestic Substances List (DSL): Present
- New Zealand management information: Inventory of Chemicals (NZIoC): Approval: HSR002801
- Philippines management information: Inventory of Chemicals and Chemical Substances (PICCS): Present

< Zinc stearate >

USA Regulatory Information

TSCA (Toxic Substances Control Act): Section8 (b) inventory: Present

Proposition 65: Not regulated

OSHA Regulation: Not regulated

CERCLA Regulation: Not regulated

SARA 302 Regulation: Not regulated

SARA 304 Regulation: Not regulated

SARA 313 Regulation: Not regulated

Foreign Regulatory Information

Substance of Rotterdam] Protocol: Not regulated

Substance of Stockholm Protocol: Not regulated

Substance of Montreal Protocol: Not regulated

Foreign Inventory Status

- Korea management information: Existing Chemical Substance(KE-26418)
- European Inventory of Existing Commercial chemical Substances(EINECS) : Present(209-151-9)
- Japan management information: Existing and New Chemical Substances (ENCS): Present ((2)-615)
- China management information: Inventory of Existing Chemical Substances (IECSC): Present(30048)
- Australia management information: Inventory of Chemical Substances (AICS): Present
- Canada management information: Domestic Substances List (DSL): Present
- New Zealand management information: Inventory of Chemicals (NZIoC): HSNO Approval: HSR003105
- Philippines management information: Inventory of Chemicals and Chemical Substances (PICCS): Present

16. Other information, including date of preparation or last revision

16.1 Indication of changes:

Version: 1

Revision date: 27 Apr, 2020

16.2 Key literature reference and sources for data:

- National chemicals information systems; <http://ncis.nier.go.kr>
- IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; <http://monographs.iarc.fr>
- ECHA; <http://echa.europa.eu/web/guest>
- HSDB; <http://toxnet.nlm.nih.gov/>
- OECD SIDS; <http://webnet.oecd.org/>
- NIOSH(The National Institute for Occupational Safety and Health)
- ACGIH(American Conference of Governmental Industrial Hygienists)
- TOMES-LOLI®; <http://www.rightanswerknowledge.com/loginRA.asp>
- National Emergency Management Agency-Korea dangerous material inventory management system; <http://hazmat.mpss.kfi.or.kr/index.do>
- Waste Control Act enforcement regulation attached [1]
- EPISUITE Program ver.4.1

16.3 Abbreviations

ACGIH: American Conference of Governmental Industrial hygienists

NIOSH: The National Institute for Occupational Safety and Health

OSHA: Occupational Safety & Health Administration

IARC: International Agency for Research on Cancer

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Dangerous Goods

ICAO/IATA: International Civil Aviation Organization/ International Air Transport Association

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail

16.4 Other

- Product should be handled, stored, and used in accordance with the generally accepted industrial hygiene practices and in conformity with all the applicable legal regulations.
- The information provided herein is based on the knowledge possessed at this present time from the view point of safety requirements.
- It should, therefore, not be construed as guaranteeing specific properties.