# SAFETY DATA SHEET

**Date Printed:**
**Version:** 2
**Revision date:** January 5, 2024
**Regulation:** In accordance with Commission Regulation (EU) 2020/878

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier
**Product name:** HDPE 8380, HDPE 8380L, HDPE 9031
**EC No.**: -
**REACH Registration No.:** Refer to chapter 3
**CAS No.**: 25213-02-9

### 1.2 Relevant identified uses of the substance or mixture and uses advised against
**1.2.1 Identified Uses**
- Raw material for industrial resin

**1.2.2 Recommended use**
- Raw material for industrial resin

**1.2.3 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:** PE Production 2 Team
**Contact Telephone:** +82-61-688-1804 (FAX: +82-61-688-1820)
**Email Address:** pilsung.hwang@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:** +82-2-729-2711, 1172 (FAX: +82-2-729-2563)
**Email Address:** wonjun.jung@hanwha.com

### 1.4 Emergency telephone number
**Emergency Telephone**: +49-6196-5016 / +82-61-688-1804

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 (CLP)

**Physical / Chemical Hazards:** Not classified

**Health Hazards:** Not classified

**Environmental Hazards:** Not classified

### 2.2 Label elements
- **Hazard pictograms:** Not applicable
- **Signal word:** Not applicable
- **Hazard statement:** Not applicable
- **Precautionary statements:** Not applicable

**2.3 Other hazards**

- **Additional precautionary statements:** Not applicable
- **National Fire Protection Association (NFPA):**
  **Health:** 0
  **Flammability:** 0
  **Reactivity:** -

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances:**

| Component | CAS No. | EC No. | Conc. / % | Classification according to 1272/2008/EC | SCL/ M-factor/ ATE | Registration No. |
|---|---|---|---|---|---|---|
| Polyethylene | 25213-02-9 | 607-647-3 | ≥99.5 | Not classified | - | 01-2119462827-27-0000 |

***Under EU REACH regulation, monomer in Polyethylene is registered.**

**3.2 Mixtures:** Not applicable

## 4. FIRST AID MEASURES

**4.1 Description of first aid measures**

**4.1.1 General information:**
Remove soiled or soaked clothing immediately, do not allow to dry.
Adhere to personal protective measures when giving first aid.
Clean body thoroughly (Bad, shower).

**4.1.2 Following 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.

**4.1.3 Following skin contact:**
In case of contact with substance, immediately flush skin with running water at least 20 minutes.
Remove and isolate contaminated clothing and shoes.
Get immediate medical advice/attention.

**4.1.4 Following eye contact:**
In case of contact with substance, immediately flush eyes with running water at least 20 minutes.
Get immediate medical advice/attention.

**4.1.5 Following ingestion:**
Do not let him/her eat anything, if unconscious.
Get immediate medical advice/attention.

**4.1.6 Self-protection of the first aider:**
First aider: Pay attention to self-protection!

**4.2 Most important symptoms and effects, both acute and delayed:**

- Symptoms and effects: None known.

**4.3 Indication of any immediate medical attention and special treatment needed:**

- 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: Use dry fire extinguisher, alcohol foam, water spray, $CO_2$, when fighting fires involving this material.
- Unsuitable extinguishing media: High Pressure Water Jet

**5.2 Specific hazards arising from the substance or mixture**

- May be ignited by heat, sparks or flames.
- Containers may explode when heated.
- Some of these materials may burn, but none ignite readily.
- Fire will produce irritating and/or toxic gases.
- If inhaled, may be harmful.

**5.3 Advice for firefighters**

- Move containers from fire area if you can do it without risk.
- Some may be transported hot.
- Run off from fire control may cause pollution.
- Contact with substance may cause severe burns to skin and eyes.
- Dike fire-control water for later disposal; do not scatter the material.
- Fire involving Tanks; Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks; Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Fire involving Tanks; Always stay away from tanks engulfed in fire.

## 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures**

**6.1.1 For non-emergency personnel**

- Stop leak if you can do it without risk.
- Do not touch or walk through spilled material.

**6.1.2 For emergency responders**

- Eliminate all ignition sources.
- Ventilate the area.
- Powder Spill; Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
- Prevent dust cloud.
- For further information refer to section 8.2.

**6.2 Environmental precautions**

- Prevent entry into waterways, sewers, basements or confined areas.

**6.3 Methods and material 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.

**6.4 Reference to other sections**

- If appropriate, Section 8 and 13 shall be referred to.

## 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling**

- Wash your hands 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.
- Please note that there are materials and conditions to avoid.

**7.3 Specific end use(s)**

- Recommendations shall relate to the identified use(s) referred to in subsection 1.2 and be detailed and operational.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**8.1 Control parameters**

**Occupational Exposure limits**

- **o EU regulation:** Not available
- **o U.S regulation:**
  - NIOSH: Not available
  - OSHA: Not available
- **o ACGIH:** Not available
- **o Biological exposure index:** Not available
- **o Others:**
  - Slovak Republic: TWA=5mg/$m^3$ (total solid aerosol)
  - Latvia: TWA= 5mg/$m^3$ (dust, listed under Polymers dust)
  - China: TWA= 5mg/$m^3$ (total dust), STEL= 10mg/$m^3$ (total dust)
- **o DNELs, PNECs:** Not available

**8.2 Exposure controls**

**Appropriate engineering controls:**

- Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Individual protection measures, such as personal protective equipment:**

**Respiratory protection:**

- Wear European Standard type P1(EN 143) approved dust mask respiratory protective equipment when necessary.

**Eye protection:**

- Wear safety goggles as follow if eye irritation or other disorder occur.

; In case of gaseous state organic material: enclosed safety goggles
; In case of vapour state organic material: safety goggles or breathable safety goggles
; In case of particulate material: breathable safety goggles

**Hand protection:**

- Wear appropriate protective gloves (insulated gloves) by considering physical and chemical properties of chemicals.

**Body protection:**

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

**Thermal hazards:**

- If appropriate, Section 5.3 shall be referred to.

**Environmental exposure controls:** Not available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Appearance** | |
| **Physical state:** | Solid |
| **Color:** | ivory white |
| **Odor:** | Not available |
| **Odor threshold:** | Not available |
| **pH:** | Not available |

| | |
|---|---|
| **Melting point/freezing point:** | 100℃~115℃ |
| **Boiling point or initial boiling point and boiling range:** | Not available |
| **Flash point:** | 221℃ |
| **Evaporation rate:** | Not available |
| **Flammability (solid, gas):** | Not available |
| **Upper/lower flammability or explosive limits:** | Not available |
| **Vapour pressure:** | Not applicable |
| **Vapour density:** | Not available |
| **Density and/or relative density:** | 0.92~0.95g/cm³(25℃) |
| **Solubility(ies):** | Soluble in organic solvents above 93℃ |
| **Partition coefficient: n-octanol/water:** | Log Kow=17.04 |
| **Auto-ignition temperature:** | 435℃ |
| **Decomposition temperature:** | Not available |
| **Viscosity:** | Not available |
| **Kinematic viscosity:** | Not available |
| **Explosive properties:** | Not available |
| **Oxidizing properties:** | Not available |
| **Molecular weight:** | 60,000-150,000g/mol |
| **Specific gravity:** | Not available |
| **Particle characteristics (solid):** | Not available |
| **Particle Size (Polymer compound):** | Not available |
| **Self-accelerated decomposition temperature (Polymer compound):** | Not available |

**9.2 Other information:** Not available

## 10. STABILITY AND REACTIVITY

**10.1 Reactivity**
- Not available

**10.2 Chemical stability**
- Stable under normal conditions.

**10.3 Possibility of hazardous reactions**
- No dangerous reaction under conditions of normal use.

**10.4 Conditions to avoid**
- Keep away from heat/sparks/open flames/hot surfaces.

**10.5 Incompatible materials**
- Combustion materials, Irritating, Toxic gases, strong oxidizing agent

**10.6 Hazardous decomposition products**
- $CO_2$, Acrolein, Formaldehyde

## 11. TOXICOLOGICAL INFORMATION

| 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 | |
|---|---|
| (a) Acute toxicity | Not available |
| Oral | Rat, $LD_{50}$ >2,000 mg/kg bw |
| Dermal | Not available |
| Inhalation | Not available |

| | |
|---|---|
| (b) Skin Corrosion/ Irritation | Not classified |
| | In test on skin irritation with rabbits, mild skin irritations were observed. (Irritating index: 0.2) |
| (c) Serious Eye Damage/ Irritation | Not classified |
| | At the 24 hours 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 hour and 7 day observations. |
| (d) Respiratory sensitization | Not available |
| (e) Skin Sensitization | Not classified |
| | In skin sensitization test with guinea pigs, skin sensitizations were not observed. |
| (f) Carcinogenicity | Not classified |
| | IARC: Group 3<br>NTP, OSHA, EU CLP 1272/2008, US EPA: Not listed |
| (g) Germ cell mutagenicity | Not classified |
| | *In vitro*: Reverse mutation test (*S. typhimurium, Escherichia coli*) with/ without metabolic activation: Negative |
| (h) Reproductive toxicity | Not available |
| (i) Specific target organ toxicity (single exposure) | Not available |
| (j) Specific target organ toxicity (repeat exposure) | Not classified |
| | Sub-chronic or pre-chronic Exposure/ In a 90-day study, rats and dogs were fed an extract of low molecular weight PE film; the film had been extracted with isooctane to yield 568 mg extract/100 g of film. Rats fed at a level of 13,500 ppm film extract showed liver changes (fat droplets, cloudy swelling, and increased liver weight) that were considered reversible in all cases. Rats fed at levels of 2700 and 540 ppm and dogs fed 2700 ppm showed no adverse effects. |
| (k) Aspiration Hazard | Not available |
| 11.2 Information on other hazards | |
| 11.2.1 Endocrine disrupting properties | Not available |
| 11.2.2 Other information | Not available |

## 12. ECOLOGICAL INFORMATION

| | |
|---|---|
| 12.1 Toxicity | Not available |
| Acute toxicity | Not available |
| Chronic toxicity | Not available |
| 12.2 Persistence and degradability | Persistence: High persistency (log Kow is more than 4 estimated.)<br>Log Kow =17.04 |

| | |
|---|---|
| | Degradability: Not available |
| 12.3 Bioaccumulative potential | Bioaccumulation: Bioaccumulation is expected to be low according to the BCF <500. (BCF = 3.162)<br>Biodegradation: Not available |
| 12.4 Mobility in soil | Not available |
| 12.5 Results of PBT and vPvB assessment | Not available |
| 12.6 Endocrine disrupting properties | Not available |
| 12.7 Other adverse effects | Not available |
| 12.8 Additional information | Not available |

## 13. DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods**
- Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

**13.1.1 Product/Packaging disposal**
- No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer.
- The waste key number must be determined as per the European Waste Types List (decision on EU Waste Types List 2000/532/EC) in cooperation with the disposal firm/producing firm/official authority.

**13.1.2 Waste treatment-relevant information**
- Waste must be disposed of in accordance with directive 2008/98/EC.

**13.1.3 Sewage disposal-relevant information**
- Release to the environment or sewage system is prohibited. Must be treated as hazardous waste.

**13.1.4 Other disposal recommendations:** Not available

## 14. TRANSPORT INFORMATION

**14.1 UN No.:** Not applicable

**14.2 UN Proper shipping name:** Not applicable

**14.3 Transport Hazard class**
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 Special precautions for user**
**in case of fire:** Not applicable
**in case of leakage:** Not applicable

**14.7 Maritime transport in bulk according to IMO instruments:** Not applicable

## 15. REGULATORY INFORMATION

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
**EU Regulatory Information**
**EU classification**
**EU 1272/2008(CLP)**
**Classification:** Not classified
**Risk phrases:** Not classified
**Safety phrases:** Not classified
**EU SVHC list**: Not regulated
**EU Authorization list**: Not regulated
**EU Restriction list**: Not regulated
**Waste Framework Directive 2008/98/EC:** Hazardous waste

**Foreign Inventory Status**
- Korea management information: Existing Chemical Substance (KE-28877)
- U.S.A management information: Section 8(b) Inventory (TSCA): Present
- China management information: Inventory of Existing Chemical Substances (IECSC): Present (05721))
- Japan management information: Existing and New Chemical Substances (ENCS): Present ((6)-1)
- Canada management information: Domestic Substances List (DSL): Present
- Australia management information: Australian Inventory of Chemical Substances (AICS): Present
- New Zealand management information: New Zealand Inventory of Chemicals (NZIoC): May be used as a single component chemical under an appropriate group standard.
- Philippines management information: Philippine Inventory of Chemicals and Chemical Substances (PICCS): Present

**15.2 Chemical safety assessment:** For this substance a chemical safety assessment has been carried out.

## 16. OTHER INFORMATION

**Product safety data sheet for prepared in accordance with Commission Regulation (EU) 2020/878**

**16.1 Indication of changes:**
Preparation date: April 27, 2020
Version: 2
Revision date: January 5, 2024

**16.2 Key literature reference and sources for data:**
TSCA; http://iaspub.epa.gov/sor_internet/registry/substreg/searchandretrieve/searchbylist/search.do
EU Regulation 1272/2008
TOMES-LOLI; http://csi.micromedex.com/fraMain.asp?Mnu=0
RightAnswer-LOLI; https://www.rightanswerknowledge.com/n0home.asp
UN Recommendations on the transport of dangerous goods Twenty-second revised edition
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; http://monographs.iarc.fr
ECHA CHEM; http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances
OECD SIDS; http://webnet.oecd.org/
HSDB; https://pubchem.ncbi.nlm.nih.gov/
EPA; http://www.epa.gov/iris
EPISUITE Program ver.4.1
NIOSH (The National Institute for Occupational Safety and Health)
ACGIH (American Conference of Governmental Industrial Hygienists)
National chemicals information systems (NCIS); http://ncis.nier.go.kr
Management Agency-Korea dangerous material inventory management system;
http://hazmat.mpss.kfi.or.kr/material.do

**16.3 Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008(CLP):**

| Classification according to Regulation (EC) 1272/2008 (CLP) | Classification procedure |
|---|---|
| - | - |

**16.4 Abbreviations**

$EC_{50}$: median effective concentration
$LC_{50}$: median lethal concentration
$LD_{50}$: median lethal dose
OEL: Occupational exposure limit
PBT: Persistent, bioaccumulative, toxic chemical
STEL: short-term exposure limit
TWA: time weighted average
vPvB: very persistent, very bioaccumulative chemical
EWC: the European Waste Code
SCL: Specific concentration limit
M-factor: Multiplication factor
ATE: Acute toxicity estimate

**16.5 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.