

SAFETY DATA SHEET

Date Printed: January 20, 2020

Version : 3

Revision date: January 20, 2020

Regulation: In accordance with Commission Regulation (EU) CLP 1272/2008

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product identifier

Product name: P-700, P-800, P-1000, P-1000F, P-1000SB, P-1300, P-1700, HSP-25, HMP-50

EC No.: 420-490-3

REACH Registration No.: -

CAS No.: 9002-86-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Identified Uses

- It is also used for rainwear, belts, shoe soles, textiles for the film, nonflammable cover, plumbing, crab baskets.

1.2.2. Recommended use

- It is also used for rainwear, belts, shoe soles, textiles for the film, nonflammable cover, plumbing, crab baskets.

1.2.3. Restrictions on use

- Used for only he commended uses

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
Ulsan plant, Hanwha Solutions Co, Ltd ,22, Saneop-ro 440 beon-gil, Nam-gu, Ulsan, Korea

Prepared by: PVC Production 1 Team (Yeosu), PVC Production 1 Team (Ulsan)

Contact Telephone: +82-61-688-1844 (Yeosu), +82-52-279-5324(Ulsan)

1.3.2 Supplier&Distributor

Company name: Hanwha Solutions Co, Ltd.

Address: Hanwha Building, 86 Chenggyecheon-ro, Jung-gu, Seoul, Korea

Prepared by: PVC Sales Team

Contact Telephone: +82-2-729-3103

Email Address: minji.go@hanwha.com

1.4. Emergency telephone number

Emergency Telephone: +82-2-729-3103 (Sales) /+82-61-688-1844 (Yeosu Plant), +82-52-279-5324 (Ulsan Plant)

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
Additional precautionary statements: Not applicable
Precautionary statements
 - **Precaution:** Not applicable
 - **Treatment:** Not applicable
 - **Storage:** Not applicable
 - **Disposal:** 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

Component	CAS No.	EC No.	Conc. / %	Classification according to 1272/2008/EEC	(Pre) registration No.
Polyvinyl chloride	9002-86-2	420-490-3	100	Not classified	01-2119458772-30-0000

*Under EU REACH regulation, monomers in Polyvinyl chloride copolymer are (pre)registered.

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.

Move to fresh
 Oxygen or arti
 Victim to lie d
 Call a physicia

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.
 Wash contaminated clothing and shoes before reuse.
 Get immediate medical advice/attention.

Take off conta
 Wash off imm
 Keep warm an
 Call a physicia
 Wash contami

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.

4.1.5. Self-protection

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

4.2 Most important symptoms and effects, both acute and delay Acute effects :

- Symptoms and effect : 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: Use regular foam, water, carbon dioxide, dry fire extinguisher when fighting fires involving this material.
- Unsuitable extinguishing media: Not available

5.2 Special hazards arising from the substance or mixture

- Thermal decomposition products: halogen compound, carbon oxides, hydrogen chloride, carbon monoxide, carbon dioxide
- Dust may form explosive mixtures with air.
- 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

- 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

- Absorb spills with inert material (e.g., dry sand or earth), then place in a chemical waste container.
- Eliminate all ignition sources.
- Stop leak if you can do it without risk.
- Please note that materials and conditions to avoid.
- Ventilate the area.
- Do not touch or walk through spilled material.
- Prevent dust cloud.

6.2 Environmental precautions

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

6.3 The methods of purification and removal

- 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 your hands thoroughly after handling.
- Please work with reference to engineering controls and personal protective equipment.
- The temperature of the substance must be maintained at or below the '49°C ' at all times

7.2 Conditions for safe storage, including any incompatibilities

- Protect from sunlight and store in a closed container.
- Store in cool and dry place.
- Please note that there are materials and conditions to avoid.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limits

o EU regulation:

- Switzerland: TWA=3mg/m³ [MAK] (respirable dust)
- United Kingdom: TWA=10mg/m³ (inhalable dust); 4mg/m³ (respirable dust)
STEL=30mg/m³ (calculated, inhalable dust); 12mg/m³ (calculated, respirable dust)
- Czech Republic: TWA=5mg/m³ (dust)

o U.S regulation :

- NIOSH: Not available
- OSHA: Not available

o ACGIH: TWA=1mg/m³ (respirable fraction)

o Biological exposure index: Not available

o Others:

- China: TWA=5mg/m³ (total dust), STEL=10mg/m³ (total dust)
- Japan: TWA= 4mg/m³ OEL (Class 2 Dust, total dust); 1mg/m³ OEL(Class 2 Dust, respirable dust)
- South Africa: TWA= 10mg/m³ (total inhalable dust); 5mg/m³ (respirable 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:

- Use an air purifying (A/P) filter respirator for organic vapour and harmful dust in order to avoid inhalation of dust.

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 by considering physical and chemical properties of chemicals.

Body protection:

- 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
Color :	white
Odor :	Odorless
Odor threshold :	Not available
pH :	Not available
Melting point/freezing point :	302 °C
Initial boiling point and boiling range :	Not available

Flash point :	391 °C
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:	1.406g/cm ³ (25°C)
Solubility(ies):	Insolubility
Partition coefficient: n-octanol/water :	Not available
Auto-ignition temperature :	435°C
Decomposition temperature :	Not available
Viscosity :	Not available
Explosive properties :	Not available
Oxidising properties :	Not available
Molecular weight :	60,000-150,000g/mol

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.

10.2 Conditions to avoid

- Keep away from heat/sparks/open flames/hot surfaces.
- Avoid contact with incompatible materials.

10.3 Incompatible materials

- Strong oxidizing agent

10.4 Hazardous decomposition products

- Hydrogen compound, carbon oxides, hydrogen chloride, carbon monoxide, carbon dioxide

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	
(a) Acute toxicity	Not available
Oral	Not available
Dermal	Not available
Inhalation	Not available
(b) Skin Corrosion/ Irritation	Not available
(c) Serious Eye Damage/ Irritation	Not available
(d) Respiratory sensitization	Not available
(e) Skin Sensitization	Not available

(f) Carcinogenicity	Not classified
	IARC : Group 3 ACGIH : A4
(g) Mutagenicity	Not classified
	<i>In vitro</i> : Ames test (<i>S. typhimurium</i>) with/ without metabolic activation: Negative
(h) Reproductive toxicity	Not available
(i) Specific target organ toxicity (single exposure)	Not available
	In rats, inhalation of fumes from heated polyvinyl chloride produced interstitial edema, as well as focal bronchial and inter-alveolar hemorrhage in the lungs of some animals.
(j) Specific target organ toxicity (repeat exposure)	Not available
	Pulmonary response was in the form of acute inflammatory changes during the early stages of dust burden, followed by the development of granulomatous lesions.
(k) Aspiration Hazard	Not available

12. ECOLOGICAL INFORMATION

12.1 Toxicity	Not available
Acute toxicity	Not available
Chronic toxicity	Not available
12.2 Persistence and degradability	Not available
12.3 Bioaccumulative potential	Not available
12.4 Mobility in soil	Not available
12.5 Results of PBT and vPvB assessment	Not available
12.6 Hazardous to the ozone layer	Not classified
12.7 Other adverse effects	- 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:

- List of proposed waste codes/waste designations in accordance with EWC.
- Waste must be disposed of in line with local regulations. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

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

15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulation/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-29063)
- U.S.A management information: Section 8(b) Inventory (TSCA): Present
- European List of Notified Chemical Substances (ELINCS): Present (420-490-3)
- Japan management information: Existing and New Chemical Substances (ENCS): Present
(6)-66, (6)-67, (6)-76, (6)-1633
- China management information: Inventory of Existing Chemical Substances (IECSC): Present (21446)
- 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

15.2 Chemical safety assessment: Not available

16. OTHER INFORMATION

Product safety data sheet for prepared in accordance with Regulation (EU) 1272/2008

16.1 Indication of changes:

Preparation date: Jun. 20, 2016

Version: 3

Revision date: January 20, 2020

16.2 Key literature reference and sources for data:

National chemicals information systems; <http://ncis.nier.go.kr>

Pubchem; <http://pubchem.ncbi.nlm.nih.gov/>

AKRON; <http://ull.chemistry.uakron.edu/erd/>

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; <http://monographs.iarc.fr>

ECHA; <http://echa.europa.eu/registration-dossier/-/registered-dossier/15859>

OECD SIDS; <http://webnet.oecd.org/>

HSDB; <http://toxnet.nlm.nih.gov/>

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 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

EC₅₀: median effective concentration

LC₅₀: median lethal concentration

LD₅₀: 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

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.