Polyethylene(HDPE)

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name Polyethylene
Synonyms Ethene, homopolymer
Use Industrial use, Raw material for chemical processes
Company BAKHTAR Petrochemical Co (BPC)

SECTION 2 HAZARDS IDENTIFICATION

Not a hazardous substance or mixture according to OSHA HCS 2012

Inhalation: DUST: Inhalation of fine particles of polyethylene may cause mild irritation but does not seem to cause any significant health effects.

FUMES: Heated or burning polyethylene may release toxic and irritating

Decomposition products. The principal decomposition products are carbon monoxide, acrolein and formaldehyde. Many other products may be formed in Small amounts. The fumes may cause lung irritation and, at very high levels, death.

SKIN CONTACT: Pure solid polyethylene does not affect the skin.

EYE CONTACT: DUST: Fine particles may cause mild eye irritation.

FUMES: Thermal decomposition products may irritate the eyes and cause Tearing. The symptoms normally stop when exposure ceases.

INGESTION: No known effects. Large amounts might cause choking and nausea.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight percent
Polyethylene	9002-88-4	>99

See **Section 8** for Exposure Guidelines and **Section 15** for Regulatory Classifications.

SECTION 4 FIRST AID MEASURES

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. When symptoms persist or in all cases of doubt seek medical advice. Wash contaminated clothing before re-use.

Inhalation Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. In case of shortness of breath, give oxygen. Call a physician immediately.

Ingestion If swallowed, call a poison control centre or doctor immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

SECTION 5 FIREFIGHTING MEASURES

FLAMMABLE PROPERTIES

Fire/explosion .

FLASHPOINT: Polyethylene can burn if strongly heated. Flash ignition temperature is 341 deg C (646 deg F)
LOWER FLAMMABLE LIMITS: Dust can explode violently above 390 deg C at airborne levels above 20g/m3
UPPER FLAMMABLE LIMITS: Not available
AUTO – IGNITION : 349 deg C (660 deg F) (2)
EXTINGUISHING MEDIA: Water, dry chemical, carbon dioxide, foam.
FIRE FIGHTING PROCEDURES: Toxic fumes from a fire may accumulate in poorly-ventilated areas.

SECTION 5: TOXICOLOGICAL INFORMATION

Polyethylene is considered non-toxic to animals by inhalation of the dust and ingestion of the solid. Inhalation of high levels of polyethylene fumes (decomposition products from heated or burning polyethylene) can cause lung damage and death. Carbon monoxide and heat are the principal hazardous agents. Pure polyethylene films and discs cause malignant tumours at the site of implantation. This process is called "solid state carcinogenesis."

Polyethylene

Suitable extinguishing media	Water spray, Alcohol-resistant foam, Dry chemical, Carbon dioxide (CO2)
Protective equipment and precautions for firefighters	Wear self-contained breathing apparatus and protective suit. Keep containers and surroundings cool with water spray.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Methods and materials for containment and cleaning up	Evacuate personnel to safe areas. Remove all sources of ignition. Spilled material will solidify. Pick up and arrange disposal without creating dust. Do not flush into surface water or sanitary sewer system.

SECTION 7 HANDLING AND STORAGE

Safe handling advice	Ensure all equipment is electrically grounded before beginning transfer operations.
Storage/Transport pressure	Ambient
Load/Unload temperature	150 °C 302 °F

HANDLING:

Keep material away from sparks, flames and other ignition sources. Do not use near welding operations, flames or hot surfaces. Use dust-tight containers. Prevent accumulation of dust. Avoid generating dust. Provide adequate ventilation to remove dust, heat and pyrolysis products.

STORAGE:

Store polyethylene in a well ventilated area, away from heat and ignition sources, combustible materials and incompatible chemicals. Avoid accumulation of dust by frequent cleaning and suitable construction of storage areas.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES

Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Eyes Wear as appropriate: Goggles, Face-shield

Skin Wear suitable protective clothing, gloves and eye/face protection.

Inhalation Use NIOSH approved respiratory protection.

EXPOSURE GUIDELINES

Contains no substances with occupational exposure limit values.

EYE/FACE: No specific requirement, but it is good practice to wear chemical safety glasses. Wear goggles or a face mask where dust or fumes may be present.

SKIN: No specific requirement, but it is good practice to avoid skin contact.

RESISTANCE OF MATERIALS FOR PROTECTIVE CLOTHING:

No specific guidelines are available.

EXPOSURE CONTROLS/PERSONAL PROTECTION COMMENTS:

Have an eye-wash fountain available in work areas where dust or fumes may

Be released. Wash hands thoroughly after handling this material. Maintain good Housekeeping.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Colourless, odour less, partially crystalline solid. It is translucent or opaque.	**BOILING POINT**: Not applicable
PH: Not applicable	**MELTING POINT**: 126-136 deg C (LLDPE)
SULUB. In WATER : Insoluble	**SPEC GRAV** : 0.911-0.935 (LLDPE)
SULUB in OTHER: Insoluble in almost all solvents at room temperature; soluble in many organic solvents above 93 deg C; may "swell" by absorption of solvents below 60 deg C.	**MOLECULAR WEIGHT :** 50,000-300,000 (typical commercial LLDPE and LDPE**)**
EVAPORATION RATE: Not applicable	**VAPOR DENSITY** :

Polyethylene

Odour	Waxy odor
Odour Threshold	no data available
Flash point	approximately > 230 °C, > 446 °F;
Flammability	Upper explosion limit: no data available
	Lower explosion limit: no data available
Boiling point/boiling range	no data available
Melting point/range	110 - 125 °C, 230 - 251 °F;
Auto-ignition temperature	approximately 349 °C, 660 °F;
Decomposition temperature	no data available
Flammability (solid, gas)	no data available
Vapour pressure	no data available
Vapour density	no data available
Density	0.91 - 0.94 g/cm3
Specific gravity	no data available
Water solubility	insoluble
Viscosity	no data available
pH	no data available
Evaporation rate	no data available
Partition coefficient: n-octanol/water	no data available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	Stable at normal ambient temperature and pressure.
Chemical stability	No decomposition if stored and applied as directed.
Conditions to avoid	None.

Polyethylene

Hazardous decomposition products Carbon oxides

Materials to avoid Oxidizing agents

Hazardous polymerisation None.

INGREDIENTS	% (W/W)	T.L.V	TOXICOLIGICAL	CAS NO.
	100			9002-88-4

SECTION 11 TOXICOLOGICAL INFORMATION

Additional Remarks Information given is based on data obtained from similar substances.

Acute dermal toxicity no data available

Acute inhalation toxicity no data available

Acute oral toxicity LD50 rat: > 2,000 mg/kg
Test substance: polyethylene

Skin corrosion/irritation Primary irritation (rabbit): 0.2 (Max. score is 8.0.)
Test substance: polyethylene

Eye damage/irritation Primary irritation (rabbit): 11.7 (Max. score is 110.)
Test substance: polyethylene
Mild eye irritation

Respiratory or skin sensitization no data available

Germ cell mutagenicity

Genotoxicity in vitro:
no data available

Genotoxicity in vivo:
no data available

Assessment Mutagenicity:
no data available

Reproductive toxicity

Reproductive toxicity:
no data available

Assessment Reproductive toxicity:
no data available

Teratogenicity:
no data available

Assessment teratogenicity:
no data available

Polyethylene

STOT - single exposure	no data available
STOT - repeated exposure	no data available
Aspiration toxicity	no data available
Carcinogenicity	**Assessment carcinogenicity:** Contains no ingredient listed as a carcinogen

SECTION 12 ECOLOGICAL INFORMATION

Aquatic toxicity	Aquatic toxicity is unlikely due to low solubility.
Toxicity to fish	no data available
Toxicity to aquatic invertebrates	no data available
Toxicity to algae	no data available
Chronic toxicity to fish	no data available
Chronic toxicity to aquatic invertebrates	no data available
Biodegradation	This material is not expected to be biodegradable.
Bioaccumulation	no data available
Mobility in soil	no data available
Other adverse effects	no data available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Code	Any unused product or empty containers may be disposed of as non-hazardous in accordance with state and federal requirements. Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures, contamination, and spillage may change the classification. If the resulting material is determined to be hazardous, please dispose in accordance with state and federal (40 CFR 262) hazardous waste regulations.
Disposal methods	Dispose of only in accordance with local, state, and federal regulations.

Empty containers. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed.

SECTION 14 TRANSPORT INFORMATION

DOT Not regulated.

IATA Not regulated.

IMDG Not regulated.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remarks no data available

SECTION 15 REGULATORY INFORMATION

INTERNATIONAL REGULATIONS

WHMIS Classification

WHMIS hazardous composition: No ingredients are hazardous according to the CPR criteria.

European Union

The product does not need to be labelled in accordance with EC directives or respective national laws.

Australia. Inventory of Chemical Substances (AICS)	Listed
Japan. Inventory of Existing and New Chemical Substances (ENCS)	Listed
Japan. Industrial Safety & Health Law (ISHL) Inventory	Listed
Canada. Domestic Substances List (DSL) Inventory	Listed
Canadian Non-Domestic Substance Listing (NDSL)	Not listed
European Inventory of Existing Commercial Chemical Substances (EINECS) Listing Product falls under the EU-polymer definition.	Not listed
Philippines. Inventory of Chemicals / Chemical Substances (PICCS)	Listed
Korea. Existing Chemicals Inventory (KECI)	Listed
China. Inventory of Existing Chemical Substances (IECSC)	Listed
Mexico. National Inventory of Chemical Substances (INSQ)	Listed
New Zealand. Inventory of Chemicals (NZIoC)	Listed
Switzerland. Inventory of Notified New Substances (CHINV)	Not listed
Taiwan. National Existing Chemical Inventory (NECI)	Listed

Please note: The names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in Section 3.

STATE REGULATIONS

California Prop. 65

Components	CAS-No.
none	

CHEMICAL INVENTORY LISTINGS OR EXEMPTIONS OF COMPONENTS

EINECS	Yes
REACH (EU) Coverage	Yes

TSCA (USA)	Yes
DSL (Canada)	Yes
AICS (Australia)	Yes
ENCS (Japan)	Yes
ECL (Korea)	Yes
PICCS (Philippines)	Yes
IECSC (China)	Yes
NZIoC (New Zealand)	Yes
Switzerland	Yes
Taiwan	Yes

GENERAL REGULATORY INFORMATION

ROHS-Compliant:	Yes
WEEE-Compliant:	Yes
REACH SVHCs >0.1% included:	No
Components listed on REACH Annex XVII (Restriction):	No

FOOD CONTACT

Compliance with relevant EU Food Contact Requirements:	Yes
Product includes one or more components with Specific Migration Limit (SML) according to EU Plastic Regulation (EU No. 10/2011):	No
Plastic Material REF-No.:	N/A
Specific Migration Limit (SML):	N/A
Dual Use Additives:	No

Compliant to EU Framework Regulation (1935/2004/EC), EU Plastic Regulation EU (10/2011) and GMP-Regulation (2023/2006/EC): Yes

USA: FDA clearances under 21 CFR for use in food packaging:	Yes JAPAN:
JHOSPA's positive list:	Yes
CANADA (HPB):	Approved
MERCOSUR (South America):	Approved
SWITZERLAND:	Approved
AUSTRALIA:	Approved
CHINA: GB 9685-2008 and amendments, incl. GB 9685-2016	Approved

FOOD ADDITIVES / GENERALLY RECOGNIZED AS SAFE (GRAS)

No

HEAVY METAL REQUIREMENTS COMPLIANCE

US CONEG: Yes

EU ELV-Directive (2000/53/EC): Yes

EU Packaging Directive (94/62/EC): Yes

ANIMAL OR VEGETAL OR GMO DERIVED RAW MATERIAL

Not used

ALLERGENS USED LIKE PEANUTS/MILK/FISH/TREE NUTS

None included according to EU Regulation No 1169/2011, Annex II

CONTAMINANTS

CMR according to EU GHS

NTP carcinogen	None included
IARC carcinogen	None included
OSHA carcinogen	None included
REACH SVHC	None included
Phthalates as listed in Directive 2007/19/EC	None included
Epoxy derivatives as set out in Regulation (EC) No 1895/2005	None included
Polycyclic aromatic hydrocarbons (PAHs)	None included
Bromo flame retardants acc. Directive 2003/11/EC	None included

SECTION 16 OTHER INFORMATION

HAZARD RATINGS

	Health	Flammability	Physical Hazard/ Instability
HMIS/	1	1	0

Prepared by Marketing and sales service Department

DISCLAIMER OF RESPONSIBILITY

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall KRPC be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if KRPC has been advised of the possibility of such damages.