For more information and technical assistance contact;
PTT Global Chemical Public Company Limited
555/1, Energy Complex, Building A, 14th -18th Floor, Vibhavadi Rangsit Rd.,Chatuchak, Bangkok 10900
TEL+66-2265-8400 Fax +66-2265-8500

บริษัท พีทีที โกลบอล เคมิคอล จำกัด (มหาชน)
555/1 ศูนย์เอนเนอร์ยีคอมเพล็กซ์ อาคารเอ ชั้น 14-18 ถนนวิภาวดีรังสิต แขวงจตุจักร เขตจตุจักร กรุงเทพ 10900
โทร+66-2265-8400 โทรสาร +66-2265-8500

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product:	**InnoPlus HDPE (All Grades except HDPE Compound)**
Chemical Name and Synonyms:	High Density Polyethylene
CAS No.:	9002-88-4
Formula:	$(CH_2\text{-}CH_2)_n$
Company Identification/Supplier:	- **PTT Global Chemical Public Company Limited** 14 I-1 Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong 21150,Thailand **- Bangkok Polyethylene Public Company Limited** Maptaphut Industrial Estate 4-I10 Rd., Maptaphut , Muang, Rayong 21150 Thailand
Emergency Telephone No:	+66(0)-3899-4000

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	AMOUNT
Polyethylene	9002-88-4*	< 100% weight
Additive	Various	< 3% weight

* See Notes in Section 16

NOTE:
This product is not considered a hazardous material at temperatures below the melting point as determined in Section 9.

SECTION 3 – HAZARDS IDENTIFICATION

PHYSICAL/CHEMECAL HAZARDS:
This product has been evaluated and does not require any hazard warning on the label under established regulatory criteria. High dust concentrations have a potential for combustion or explosion.

HUMAN HEALTH HAZARDS:
Not classified as dangerous substance. Handling and/or processing of this material may generate dust which may cause mechanical irritation of the eyes, skin, nose and throat.

ENVIRONMENTAL HAZARDS:
Not classified as dangerous material.

Disclaimer: To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however, we do not assume any liability what so ever for the accuracy and completeness of such information. We make no warranties which extend beyond the description contained herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose. It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products. No liability can be accepted in respect of the use of our products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

EFFECTS AND SYMTOMS:

Eyes
No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns. When heated to decomposition it emits acid smoke and irritating fumes.

Skin
No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns.

Inhalation
Dust: Exposure to airborne concentrations well above the recommended exposure limits may cause irritation of the nose, throat, and lungs.
Vapor: If heated to more than 300°C, the product may form vapors or fumes which could cause irritation of the respiratory tract, coughing, and shortness of breath.

Ingestion
No significant health hazards identified.

SECTION 4 – FIRST AID MEASURES

EYE CONTACT
Flush eyes with running water immediately while holding the eyelids open. Remove contact lens, if worn, after initial flushing, and continue flushing for at least 15 minutes.
Get medical attention.

SKIN CONTACT
Molten resin: If molten material comes in contact with the skin, cool under ice water or running stream of water. Do not attempt to remove the material from the skin. Remove could result in severe tissue damage. Get medical attention.

INGESTION
If swallowed, do not induce vomiting. Give a person a glass of water or milk to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.

INHALATION
Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

SECTION 5 – FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING AGENTS: Water haze, Foam, Chemical powder.

FOR SAFETY REASONS UNSUITABILITY EXTIGUISHING AGENTS: Water jet.

Disclaimer: To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however, we do not assume any liability what so ever for the accuracy and completeness of such information. We make no warranties which extend beyond the description contained herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose. It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products. No liability can be accepted in respect of the use of our products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

SPECIAL HAZARDS:
Caused by the material, its product of combustion or resulting gases: In case of fire it can release: Water (H_2O), Carbon dioxide (CO_2), and when lacking oxygen (O_2), Carbon monoxide (CO). The products of the burning are dangerous.

PROTECTIVE EQUIPMENT:
Use a mask with universal filler. Use self-contained breathing apparatus within confined rooms.

SECTION 6 – ACCIDENTAL RELEASE MEASURE

PROTECTIVE MEASURES: Eliminate all sources of ignition in vicinity of spilled material. Wear appropriate personal protective equipment when cleaning up spills.

SPILL MANAGEMENT: Avoid creating dust clouds. Shovel, sweep up or use industrial vacuum cleaner to pick up. Place in container for proper disposal. Reduce airborne dust and prevent scattering by moistening with water. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. If heated material is spilled, allow it to cool before proceeding with disposal method.

SECTION 7 – HANDLING AND STORAGE

INFORMATION FOR SAFE HANDLING:
No special requirements necessary, if handled at room temperature.
Avoid spilling the product, as this might cause falls.
Potential toxic/irritating fumes may be evolved from heated material.
Provide appropriate ventilation for such processing conditions.
Take precautionary measures against explosion risks, as all types of polymers may develop dust during transporting or grinding of granules.

REQUIREMENTS TO BE MET BY STOREROOMS AND CONTAINERS:
Take precautionary measures to prevent the formation of static electricity.
Do not smoke. Ground equipment electrically.

INFORMATION ABOUT STORAGE IN ONE COMMON STORAGE FACILITY:
Not required.

FURTHER INFORMATION ABOUT STORAGE CONDITIONS:
Protect from heat and direct sunlight.
Store under dry conditions.

SPECIFIC APPLICATIONS:
For safe stacking follow the storage recommendations specific for this product.

Disclaimer: To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however, we do not assume any liability what so ever for the accuracy and completeness of such information. We make no warranties which extend beyond the description contained herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose. It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products. No liability can be accepted in respect of the use of our products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
Use in a well-ventilated area. If handling results in dust generation, special ventilation may be needed to ensure that dust exposure does not exceed the OSHA PEL for nuisance dust. If heated material generates vapor or fumes, use process enclosures, local exhaust ventilation, or other engineering controls to control exposure.

PERSONAL PROTECTIVE EQUIPMENT:

Respiratory system
Product processing, heat sealing of film or operations involving the use of wires or blades heated above 300°C may produce dust, vapor or fumes . To minimize risk of overexposure to dust, vapor or fumes it is recommended that a local exhaust system is placed above the equipment, and that the working area is properly ventilated. If ventilation is inadequate, use certified respirator that will protect against dust/mist.

Skin and body
Hot material: Wear heat-resistant protective gloves, clothing and face shield able to withstand the temperature of the molten product.
Cold material: None required; however, use of gloves is good industrial practice.

Hand
Hot material: Wear heat-resistant protective gloves able to withstand the temperature of the molten product.
Cold material: None required; however, use of gloves is good industrial practice.

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Eyes
Safety glasses with side shields. Use dust goggles if high dust concentration is generated.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Pellets.
ODOR:	Slight waxy odor.
COLOR:	Translucent to white.
FREEZING POINT:	No test data available.
MELTING POINT:	125 – 135 °C

Disclaimer: To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however, we do not assume any liability what so ever for the accuracy and completeness of such information. We make no warranties which extend beyond the description contained herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose. It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products. No liability can be accepted in respect of the use of our products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

BOILING POINT:	No test data available
FLASH POINT:	No test data available
DENSITY:	0.945 – 0.970 g/cm3
SPECIFIC GRAVITY:	No test data available
AUTOIGNITION TEMPERATURE:	350°C
EXPLOSIVE PROPERTIES	High dust concentrations have a potential for combustion or explosion
PERCENT VOLATILE:	No test data available
VAPOR PRESSURE:	No test data available
WATER SOLUBILITY:	Insoluble.

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY:
This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

CONDITIONS TO AVOID: Not Applicable.

INCOMPATIBILITY WITH OTHER MATERIALS:
May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSTION PRODUCTS:
Low molecular weight hydrocarbon, carbon dioxide, carbon monoxide, unidentified organic compounds.

SECTION 11 – TOXICOLOGICAL INFORMATION

PRIMARY IRRITANT EFFECT:
ON THE SKIN: No irritant effect.
ON THE EYES: No irritant effect.
SENSITIZATION: No sensitizing effect known.

ADDITIONAL TOXICOLOGICAL INFORMATION:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

SECTION 12 – ECOLOGICAL INFORMATION

MOBILITY AND BIOACCUMULATION POTENTIAL:
Floats on water. There is no bioaccumulation.

OTHER INFORMATION:
Disclaimer: To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however, we do not assume any liability what so ever for the accuracy and completeness of such information. We make no warranties which extend beyond the description contained herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose. It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products. No liability can be accepted in respect of the use of our products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

This product is not biodegradable.

GENERAL NOTES:
The product is not toxic, small particles can have physical effects on water and Soil organisms.

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL COSIDERATION/WASTE INFORMATION:
Recycle to process, if possible. Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.

SECTION 14 – TRANSPORT INFORMATION

TRANSPORT/ADDITIONAL INFORMATION:
According to national and international guidelines, which regulate the road-, rail-, air- and sea-transport, this product is classified as not dangerous.

SECTION 15 – REGULATION INFORMATION

US. Toxic Substances Control Act:	All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30
Inventories;	
AUSTRALIAN INVENTORY (AICS) :	In compliance.
CANADA INVENTORY (DSL) :	In compliance.
CHINA INVENTORY (IECS) :	In compliance.
EC INVENTORY (EINECS) :	In compliance.
JAPAN INVENTORY (ENCS) :	In compliance.
KOREA INVENTORY (ECL) :	In compliance.
OSHA Hazard Communication Standard:	This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16 – OTHER INFORMATION

NOTES:
Date of issue: September-2011
Prepare by: Technical Support, Polymer VC, PTT Global Chemical PLC.
Polymer CAS Numbers: For polyethylene homopolymer grades: 9002-88-4

Disclaimer: To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however, we do not assume any liability what so ever for the accuracy and completeness of such information. We make no warranties which extend beyond the description contained herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose. It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products. No liability can be accepted in respect of the use of our products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

For more information and technical assistance contact;
PTT Global Chemical Public Company Limited
555/1, Energy Complex, Building A, 14th -18th Floor, Vibhavadi Rangsit Rd.,Chatuchak, Bangkok 10900
TEL+66-2265-8400 Fax +66-2265-8500

บริษัท พีทีที โกลบอล เคมิคอล จำกัด (มหาชน)
555/1 ศูนย์เอนเนอร์ยี่คอมเพล็กซ์ อาคารเอ ชั้น 14-18 ถนนวิภาวดีรังสิต แขวงจตุจักร เขตจตุจักร กรุงเทพ 10900
โทร+66-2265-8400 โทรสาร +66-2265-8500

NOTICE:

This Material Data Sheet has been based upon data considered to be accurate at the time of its preparation.
Despite our efforts, it may not be up to date or applicable to the circumstances of any particular case. We take no responsibility for inappropriate use, processing and handling by purchasers and uses of the product.

Disclaimer: To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however, we do not assume any liability what so ever for the accuracy and completeness of such information. We make no warranties which extend beyond the description contained herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose. It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products. No liability can be accepted in respect of the use of our products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.