MSDS

CHEMICAL SAFETY DATA SHEET

POLYPROPYLENE

NGHI SON REFINERY & PETROCHEMICAL LLC

I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CAS No: 9003-07-0

UN number: Not applicable

EC registration number: Not applicable

Product name: Polypropylene

Synonym: Polypropylene Homopolymer

Name and address of manufacturer: Nghi Son Refinery and Petrochemical Limited Liability Company.

Use purpose: The substance has a wide range of uses such as: plastic packages, synthetic fibers, automobile industry parts, various parts for construction/building industries, sport equipment, household, hygienic goods.

Contact information:

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HEALTH & SAFETY SECTION PASSED DOCUMENT CHECKED

TRỊNH VĂN NGHĨA 9th Apr. 2018

HEALTH & SAFETY DEPUTY SEC. MGR

II. INFORMATION ON COMPONENTS OF SUBSTANCES

Names of dangerous components	CAS number	Chemical formula	Content (% by weight)
Polypropylene	9003-07-0	$(-CHCH_3CH_2-)_n$	99 MIN

III. IDENTIFICATION OF DANGEROUS PROPERTIES OF CHEMICALS

Rate of dangerous classification

Classification according to Hazardous Material Identification System: 1

Hazard warning

Physical hazards: Flammable Solid.

Health hazards: This is polymer and physiologically inert. And there is not acute effect on human body.

Environment hazards: This product would not decompose for a long period in environment and it would be a cause of environmental pollution. However water solubility of polymer can be neglected and toxicity to aquatic lives is considered to be low.

Routes of exposure and symptoms

Eye: Contact of powder or fines with eye may cause mechanical irritation. Contact with hot or molten material may cause severe injury, including possible blindness.

Skin: Contact of powder or fines with skin may cause mild to more serious irritation that is increased by mechanical rubbing or if skin is dry. Contact with hot or molten material may cause severe thermal bums.

Ingestion: Ingestion of this product is unlikely. However, ingestion of product may produce mild gastrointestinal irritation and disturbances.

Inhalation: Inhalation of fine particles may cause respiratory irritation. Fumes produced while thermal processing may cause irritation, pulmonary edema and a possible asthma-like response.

IV. MEASURES OF FIRST AID

Accident in case of eye exposure: Keep eye wide open while rinsing. Immediately flush with plenty of water. After initial flushing, remove any contact lenses easily and continue flushing for at least 15 minutes. Call a physician immediately and dianosis.

Accident in case of skin exposure: Remove/Take off immediately all contaminated clothing. Rinse skin with soap and water. If skin irritation or a rash occurs. Call a physician immediately and dianosis. If the molten polymer adheres to the skin, cool it immediately with cold water. Don't take off the polymer and clothes adhering to the skin forcibly. Call a physician immediately and dianosis.

Accident in case of respiration exposure: Move victim to fresh air when victim inhales the gas generated from molten polymer of the high temperature voluminously. If breathing is irregular or stopped, administer artificial respiration. Administer oxygen if breathing is difficult. Call a physician immediately and dianosis.

Accident in case of ingestion exposure: Rinse in the mouth with water or milk well. Must not give anything from a mouth to the uncoslousness victim. If it is possible, insert the finger in the victim's throat and let victim vomit.Call a physician immediately and diagnosis.

Note for physician: Show directions for use or safety data sheet if possible. Keep victim warm and quiet.

V. HANDLING MEASURE UPON FIRE

Classification of flammability: Flammable solid.

Appropriate extinguishing substances: Dry chemical, Sand, CO2, water spray or regular foam. Do not use straight streams as it may scatter and spred fire.

The agents of fire and explosion: sparks, static electricity, high temperature, naked light.

Specific hazards arising from fire fighting: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion carbon dioxide, carbon monoxide, ketones, aldehydes, unidentified organic compounds. Dense smoke is emitted when burned without sufficient oxygen.

Protective Equipment & Precautions for Fire Fighters: Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

Fire fighting instructions: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. In case of fire, barricade the area. Spilled material may cause a slipping hazard. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment.

VI. MEASURE TO PREVENT, RESPOND TO INCIDENTS

When spilling, leakage at small level: Sweep up with a bloom. Pick up and transfer to properly labeled containers.

When spilling, leakage at large scale: Restrict the area around the leakage to authorized personnel by stretching rope, etc. . Soak up with Bloom. Pick up and transfer to properly labeled containers. If release into see or river, dam up with plastic tarp to minimize spreading. Catch with ladle or absorb with vacuum system. Gather up and transfer to properly labeled containers. If the material leaked in molten state, solidify by water etc. and recover. After Gather up and transfer to properly labeled containers.

Personal precautions: Do not touch or walk through spilled material. Remobe all ignition sources (no smoking, flares, sparks or flames in immediate). Evacute leeward and keep away from leak area. Must use proper protection and do from windward. Be careful because the floor where the product leaked is slippery.

Environmental Precautions: Prevent into guitter,sewage and river.

Preventive measures against secondary disaster: Remobe all ignition sources (no smoking, flares, sparks or flames in immediate).

VII. REQUIREMENTS FOR STORAGE

Precautions for safe handling

Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. If necessary, use with local exhaust ventilation. Use personal protective equipment as required which is in a heated liquid state. Do not breathe dust/fume/gas/mist/vapors/spray. Do from windward to prevent exposure. After the handring, do hand-washing,face-washing enough.

Requirements for storage areas and containers

Keep tightly closed in a dark and cool place. Keep in properly labeled containers. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep containers tightly closed in a cool, well-ventilated place. Distinguish the oxidizing agents and storage.

VIII. IMPACT ON HUMAN AND REQUIREMENTS FOR INDIVIDUAL PROTECTIVE DIVICES

Measures to limit necessary contact

Install adequate ventilation, especially in confined areas. Install eye shower and body shower near the work site.

Means of individual protection as working

Eye protection: Tight sealing safety goggles. Face protection shield

Body protection: Suitable protective clothing.

Hand protection: protective gloves.

Respiratory protection: Dust mask .

Protective means in case of handling incidents

After having taken an first aid,keep warm with blankets and keep rest. Immediately call a physician and be treated.

Measures of sanitation

Washing hands before eating,drinking,smoking or using toilet facilities.

IX. CHEMICAL-PHYSICAL CHARACTERISTICS

Physical state	: Solid	**Isotactic index** (wt%)	96-98.5
Color	:	**Charpy Impact strength** (KJ/m^2)	2-7
Density (g/cc)	091		
Chlorine in Power (ppm)	25		
Titanium in Powe (ppm)	1		

X. STABILITY AND OPERATION ABILITY OF CHEMICALS

Chemical Stability: Stable under normal conditions of use.

Response capability:

Conditions to avoid: Avoid heat, sparks, open flames and other ignition sources, oxidizing materials.

Hazardous decomposition: Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Hazardous polymerization: will not occur.

XI. INFORMATION ON TOXICITY

Names of components	Kind of threshold	Result	Contact	Test creature
No information				

Chronic affects with human: No information.

Other toxic affects: No information.

Others: No information.

XII. INFORMATION ON ECOLOGY

Toxicity with creature

Names of components	Kind of creature	Effect cycle	Result
No information			

Impact in the environment

Environmental fate: No information

The toxicity level of biodegradable products: No information

XIII. DISPOSAL CONSIDETATIONS

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

XIV. REQUIREMENT IN TRANSPORT

Regulations on transport of dangerous goods in Vietnam

Decree No. 104/2009/ND-CP dated 09/11/2009 of the Government defining the list of dangerous goods and transport of dangerous goods by road motor vehicles: Not applicable.

Decree No. 29/2005/ND-CP dated 10/3/2005 of of the Government defining the list of dangerous goods and the transport of dangerous goods on inland waterways: Not applicable.

Regulations on international transport of dangerous goods

European Agreement DConcerning the international carriage of Dangerous Goods by Road: Not applicable.

Land Transport (as per Australian Dangerous Goods Code classification): Not applicable.

International Maritime Dangerous Goods (IMDG): Not applicable.

XV. TECHNICAL REGULATIONS AND LAW PROVISIONS REQUIRED TO COMPLY WITH

Vietnamese Law and Regulations: Not applicable

EU and USA Federal & State Regulations: Not applicable

XVI. OTHER NECESSARY INFORMATION

Classification according to Hazardous Material Identification System

Health: 0

Flammability: 1

Physical Hazard: 0

SDS Version number:

SDS Effective Date:

SDS Last Updated:

Uses and Restrictions

This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.

SDS Distribution

The information in this document should be made available to all who may handle the product.

Disclaimer

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing and specific property of the product.