PRODUCT RISK ASSESSMENT

Names:

CAS No. 9002-88-4
High Density Polyethylene (HDPE)

Product Overview:

- High Density Polyethylene (HDPE) is a colorless, non flammable, non reactive solid with no odor. See Product Description.
- High Density Polyethylene (HDPE) is usually stored and/or transported as 25 Kg Bags. It is used in raw material for plastic Processing industry.
- High Density Polyethylene (HDPE) is a non-hazardous material and it's over exposure by short term or long term inhalation does not cause any harmful health effect. See Health Information.
- For handling and storage keep in cool , dark and well ventilated place, Keep away from heat and sunlight
- RIL supports the sale of High Density Polyethylene (HDPE) for use of plastics in Processing Industry only in industrial applications. Please provide adequate ventilation when using the material and follow the principles of good occupational hygiene. See Exposure Potential.
- Not classified as dangerous for supply and use. See Physical Hazard Information.
- Release of dust to environment does not pose any threat. See Environmental Information.

Manufacture of Product:

- Capacity: – Worldwide capacity of HDPE in 2010 was in excess of 41 Million Metric Tonnes. RIL capacity is ~ 350,000 Metric Tonnes.
- Process: HDPE is prepared by Solution, Slurry and Gas Phase Polymerization at RIL.

Product Description:

- High Density Polyethylene (HDPE) is a colorless solid in granular form with no odor. It is non-reactive with environment.

Product Uses:

- High Density Polyethylene (HDPE) is widely used in Plastic Processing Industry to make variety of Products such as Packaging Films, Pipes & Profiles, Blow Molded Containers, Woven Sacks, Monofilaments, Caps and Closures, Household articles, Industrial products such as Crates etc.

Exposure Potential:

- High Density Polyethylene (HDPE) is used as raw material for plastic processing industry. Based on the uses for High Density Polyethylene (HDPE), the public could be exposed through:

- Workplace Exposure: Exposure can occur either in manufacturing facility or in the various industrial or manufacturing facilities that use High Density Polyethylene (HDPE) It is produced, distributed, stored and consumed in closed systems. Those working with High Density Polyethylene (HDPE) in manufacturing operations could be exposed to dust during maintenance, packaging, sampling, testing, or other procedures. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.See Health Information.

- Consumer Exposure to RIL Product: High Density Polyethylene (HDPE) is used as a raw material in the manufacture of plastic products. RIL does not sell High Density Polyethylene (HDPE) for direct consumer use. RIL supports the sale of High Density Polyethylene (HDPE) only for use in industrial applications and will not knowingly sell into unsupported applications. Direct consumer exposure to RIL High Density Polyethylene (HDPE) is unlikely.

- Environmental Releases: The product is non-biodegradable.
  In the event of spillage, ensure suitable personal protection including respiratory protection during removal of spillage. Spillages may be slippery. Avoid release to environment. Do not allow to drains, sewers or watercourses. Sweep up and shovel into waste drums or plastic bags.

- Large Releases: The product is non-biodegradable.
  Industrial spills or releases of High Density Polyethylene (HDPE) are infrequent. If a large spill does occur, the material should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. Positive pressure, self-contained breathing apparatus (SCBA) with a full-face mask approved by NIOSH is recommended for emergency work. Eliminate all sources of ignition immediately.

Environmental, Health, and Physical Hazard Information.

In case of fire –

- Extinguishing Media: Extinguish preferably with foam, carbon dioxide or dry chemical.
- Fire Fighting Protective Equipment: A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.
- Hazardous Decomposition Product(s): Combustion or thermal decomposition will evolve irritant vapors.
- Can melt and burn in a fire. Molten material tends to flow or drip and will propagate fire. See Physical Hazard Information.

For more information, request the relevant Material Data Safety Sheet from RIL

Health Information:

- High Density Polyethylene (HDPE) is non toxic non hazards material and can be considered as material safe for contact with humans and animals,
- Ingestion Low oral toxicity. High Density Polyethylene (HDPE) LD50 (rat) : >5000 mg/kg
- Inhalation: Low acute toxicity. Dusts and vapours evolved during thermal processing may cause irritation to the respiratory system.
- Skin Contact No evidence of irritant effects from normal handling and use.
- Eye Contact Dust may have irritant effect on eyes. Permanent damage is unlikely.
- Long Term Exposure chronic effects are unlikely.

For more information, request the relevant Material Data Safety Sheet

Environmental Information:

- Under normal conditions, High Density Polyethylene (HDPE) exists as a solid granule.
- High Density Polyethylene (HDPE) is susceptible to degradation by exposure to sunlight .
- High Density Polyethylene (HDPE) is insoluble in water. Floats on water. The product has low mobility in soil.
- The product is non-biodegradable.
- Low toxicity to aquatic organisms.
- Unlikely to affect biological treatment processes

For more information, request the relevant Material Safety Data Sheet

Physical Hazard Information:

High Density Polyethylene (HDPE) is a non-reactive product, stable at ambient storage conditions. It does not decompose in the air and does not release any harmful gases or other products. Keep the product in original container in a cool, ventilated place. No special precautions needed for handling and storage. Can melt and burn in fire. Molten material tends to flow and will propagate fire.

For more information, request the relevant Material Data Safety Sheet

Regulatory Information:

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of High Density Polyethylene (HDPE). These regulations may vary by city, state, country, or geographic region. Information may be found by requesting the Technical Data Sheet, or requesting the relevant Material Data Safety Sheet from RIL.

Reference:

- National Institute for Occupational Safety and Health guide to chemical hazards and International Chemical Safety Cards (WHO/IPCS/ILO) and http://toxnet.nlm.nih.gov/cgi-bin/sis/search,

  http://webnet3.oecd.org/eChemPortal/Results2.aspx?SubstanceId=169630, . http://ecb.jrc.ec.europa.eu/esis/index.php?PGM=ein

- European Commission Joint Research Centre (http://ecb.jrc.ec.europa.eu/)
- Regulation EC/1907/2006 (REACH)

- European SDS DirectiveANSIZ400

Other Information:

As part of its Sustainability Goals, RIL has committed to make publicly available safety assessments for its products globally. This product safety assessment is intended to give general information about the chemical (or categories of chemicals) addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the relevant Material Data Safety Sheet, which should be consulted before use of the chemical. This product safety assessment does not replace required communication documents such as the Material Data Safety Sheet.

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