

## MATERIAL SAFETY DATA SHEET

## MANUFACTURER:

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**I - MATERIAL IDENTIFICATION AND USE**

## CHEMICAL NAME AND SYNONYMS:

Polycaprolactam; Polyamide 6; Nylon 6

## CAS NUMBER:

25038 - 54 - 4

## CHEMICAL FAMILY:

Polyamide polymers

## FORMULA:

 $[NH(CH_2)_5CO]_n$ 

## CANADA - TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION:

Not hazardous

## CANADA - WHMIS CLASSIFICATION:

Not a controlled article, not a manufactured article

## U.S.A. - D.O.T. HAZARD CLASS:

Not regulated

## U.S.A. - RCRA STATUS OF UNUSED MATERIAL (40 CFR 261):

Not hazardous

USES: Raw material for injection molding and extrusion

**II - INGREDIENTS**

INGREDIENTS: Polycaprolactam and proprietary additives

Proprietary ingredients may include such things as carbon black and fibrous glass. Some ingredients in their pure form are listed as hazardous. In pelletized nylon, however, they are encapsulated and are not expected to present any hazards otherwise associated with them.

**III - PHYSICAL DATA**

PHYSICAL STATE: solid

SPECIFIC GRAVITY: 1.13 to 1.40 depending on grade

MELTING POINT: 215 °C (420 °F)

BULK DENSITY, APPROX.: 0.7 kg / L (base polymer)

SOLUBILITY IN WATER: nil

ODOR: Slight wax odor

APPEARANCE: solid cylindrical pellets

**IV - FIRE AND EXPLOSION DATA**

FLAMMABILITY: Will ignite and burn above 250 °C (480 °F)

EXTINGUISHING MEDIA: Water, dry chemical, carbon dioxide

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters and others exposed to products of combustion should wear self-contained breathing apparatus to avoid inhalation of combustion products.

**V - REACTIVITY DATA**

STABILITY: Stable at ambient temperatures

INCOMPATIBILITY ( MATERIALS TO AVOID ): Strong oxidizing chemicals

CONDITIONS TO AVOID: Avoid direct contact with flame

HAZARDOUS DECOMPOSITION PRODUCTS: When burned, gases may contain CO and HCN

HAZARDOUS POLYMERIZATION: Will not occur

**VI - HEALTH HAZARD DATA**

THRESHOLD LIMIT VALUE: None established for this material. However ACGIH have limits for

"nuisance dusts" which is TLV - TWA = 10 mg / m<sup>3</sup>.

INHALATION: Avoid breathing gases from molten material. Provide ventilation at processing areas.

**VII - SPILL, LEAK & DISPOSAL INFORMATION**

WASTE DISPOSAL: Dispose of waste nylon 6 as non-hazardous solid waste in accordance with federal state or provincial and local government regulations.

**VIII - SPECIAL PROTECTION INFORMATION**

PERSONAL PROTECTIVE EQUIPMENT: Required near molten material, safety glasses, heat resistant gloves and protective garments.

RESPIRATORY PROTECTION: None under normal conditions, organic vapor respirator when around molten polymer.

**IX - SPECIAL PRECAUTIONS**

HANDLING AND STORAGE: Store in a dry area, avoid damage to containers and keep them closed.  
Moisture absorption will cause poor quality processing.

OTHER PRECAUTIONS: In converting nylon 6 to finished products it is heated and melted, it should be in an enclosed processing machinery. The ventilation system should provide local exhaust. Fumes and vapour given off will contain caprolactam, the TLV-TWA for it are: dust and/or vapour = 5 mg / m<sup>3</sup>

ENVIRONMENT: Nylon 6 does not biodegrade. If kept uncontaminated it can be reprocessed.

**IX - PREPARATION OF MSDS**

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DATE: January 8, 1998

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DATE: January 3, 2014

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