



MATERIAL SAFETY DATA SHEET
(according to the Regulation No. 1907/2006 of The European Parliament and of the Council (EC) of 18. December 2006 on REACH)

Polyethylene TIPELIN

Printing date: 20.05.2005.

Last revision: 16.01.2009.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the substance or preparation

Trade name: Tipelin **CAS:** 25213-02-9 (grades made by Phillips technology)
25087-34-7 (grades made by Mitsui technology)
Chemical name: high-density polyethylene (PE - HD)
Registration number: the product is not registered according to Regulation of The European Parliament and of the Council (EC) No. 1907/2006 (Title 1, Article 2, Paragraph 9).

1.2 Use of the substance

The substance has a wide range of uses such as: plastic packages, pipes/tubes, various parts for construction/building/automotive industries, sport equipment, household, etc.

1.3 Company/undertaking identification

Tisza Chemical Group Public Limited Company, H-3581 Pf. 20. Tiszaújváros, Hungarian Republic
Company registration number (CRN): 05-10-000065

e-mail: sds@tvk.hu

1.4 Emergency telephone:

Tisza Chemical Group Public Limited Company, H-3581 Pf. 20. Tiszaújváros, Hungarian Republic

Company operator at TVK Plc. (24 hours)

Phone: +36 49 522 222

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1096 Budapest, Nagyvárad tér 2., Hungarian Republic

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2. HAZARDS IDENTIFICATION

2.1 Compound classification

Polyethylene TIPELIN is not classified as a dangerous substance according to the Directive 67/548/EEC, the Act of the National Council of No. 1999/45 Coll. of Law, and of the No. 76/769 EU Coll. of Law.

2.2 Particular hazards for human health

In the proper conditions of use are followed, Tipelin has neither acute nor chronic adverse effects on the human health.

Dust inhalation may irritate respiratory organs.

Melted product may cause serious burns following the contact with the skin or eyes. Ingestion of small amounts should not cause any problems.

2.3 Environmental hazard

Tipelin has no harmful effects in the environment. In the environment it is a foreign substance with

very slow degradation. The degradation is mainly caused by UV irradiation. The substance is insoluble in water.

2.4 Other information

Flammable, but not readily to ignite. Dangerous (e.g. carbon monoxide) and irritating substances may be released by combustion. The dust is explosive; air-borne dust concentration above the low explosive limit may cause the risk of explosion. The product can become electrostatically charged.

2.5 Other hazards

Not specified.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical characteristics

Polyethylene copolymer (containing comonomer hexene-1 or butene-1 or propene), in the form of pellets of wax appearance. Black grades have about 2% carbon black content.

3.2 Hazardous ingredients in product

None

4. FIRST AID MEASURES

4.1 General information

No special precaution measures are needed. In case of health problems or uncertainty seek medical attention and provide information from this material safety data sheet.

4.2 Inhalation

In case of dust or irritating vapors inhalation move the affected person to fresh air. Seek medical advice if the symptoms persist.

4.3 Eye contact

If the dust irritates eyes, rinse eyes with water or remove the dust as other common physical contamination. Seek medical advice if the symptoms persist.

4.4 Skin contact

No first aid measures are generally needed. General hygiene measures should be followed. Don't remove the melted product from the skin. Cool affected area with running water and provide medical attention.

4.5 Ingestion

In case of ingestion of bigger amounts seek specialized medical attention.

5. FIRE-FIGHTING MEASURES

5.1. Suitable extinguishing media

Foam, extinguishing powder; in case of great fire water spray or mist.

5.2. Extinguishing media which shall not be used for safety reasons

Full water-jet.

5.3. Special hazard in case of fire

In case of fire thick smoke may form. Carbon oxides (CO and CO₂) may develop.

5.4. Special hazard of explosion

During the transport of the product (e.g. filling or emptying of the silos, tanks, hoppers, etc.) dust particles may be formed in the production facilities, which following its accumulation, may ignite or explode in the consequence of electrostatic charge induction. Measures against electrostatic charging are therefore needed (grounding, measures for safe electrostatic discharging) for these facilities.

5.5 Special protection equipment for fire-fighters

Full protective clothing and self-contained breathing apparatus.

5.6 Other information

In case of great fire, protect persons, storage facilities, and all other objects near the fire with the

water spray.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions

Spilled pellets may cause slipping hazard and the risk of tumbling. Avoid areas with the scattered air-born dust. Do not inhale the dust. Avoid contact of the melted material with the skin or eyes.

6.2 Environmental precautions

Do not drain spilled material in the canalization system.

6.3 Recommended clean-up methods

Sweep spilled material and place it in appropriate packages (big-bags) or clean containers. According to the level of contamination, the spilled material may be recycled, or disposed in compliance with the relevant waste management legislation.

7. HANDLING AND STORAGE

7.1. Handling

Keep to all fire-fighting measures (do not work with open flame, keep away from all sources of ignition, do not smoke). Prevent dust formation and electrostatic discharging. Prevent accidental releases of the material in the environment during the manipulation.

7.2 Storage

Storage facilities must fulfill all fire safety requirements for buildings, and all electrical appliances must be compliant with the applicable regulations. Store the product in dry, well-ventilated roofed storehouse. Protect from direct sunlight. Recommended storage temperature: -20°C to + 40°C. The product should be kept at least 1 m from the heat sources. Prevent accidental releases of the material in the environment during the storage.

7.3 Specific use(s)

Not specified.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Exposure limit values

Allowed exposure limit value for the whole concentration of polyethylene dust in the air on the workplace is 5 mg.m^{-3}

8.2 Exposure controls

Recommended method for monitoring of polyethylene dust in air on workplace: gravimetry and dustmeter.

8.3 Occupational exposure controls

Workplace protective measures

- in case of dust formation use adequate ventilation.

Individual protective measures:

The workers should wear personal protection equipment (PPE) for the protection of eyes, respiratory system, skin, foots and hands, as follows:

<i>eyes</i>	- safety goggles
<i>respiratory system</i>	- respirator against dust, in case of fire self-contained breathing apparatus
<i>skin</i>	- protective clothing
<i>legs</i>	- closed shoes, slip-resistant
<i>hands</i>	- protective gloves made of para-aramid/carbon composite fabric, with the heat insulation to min. 270°C and leather sleeves for the forearm protection. For example, five-fingers gloves from KCL, type "Karbo TECT" with the leather sleeves (heat insulation to 350°C) may be used

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

- physical state at 20°C: solid
- colour: colourless
- odour: typical paraffin

9.2. Important health, safety and environmental information

- pH-value: not defined
- boiling point (°C): not specified
- flammability: C3
- low explosion limit (dust) /g.m⁻³/: 100
- oxidizing properties: none specified
- vapor pressure at 20°C: not specified
- density at 23°C /kg.m⁻³/: 934-964
- water solubility at 20°C /g.l⁻¹/: insoluble
- solubility in aliphatic or aromatic solvents and chlorinated hydrocarbons at 80°C /g.l⁻¹/: soluble
- partitioning coefficient n-octanol/water: not specified
- viscosity at 20°C /mPa.s/: not defined at specified temperature
- vapor density: not defined
- evaporation speed: not defined

9.3. Other information

- melting point (pellets), /°C/: 125-145
- flash point (pellets), /°C/: 350-370
- ignition temperature (pellets), /°C/: 370-390
- ignition temperature (settled dust of the polymer), /°C/: 350
- ignition temperature (air-borne dust of the polymer), /°C/: 445
- minimum ignition energy /J/: 1,6
- combustion heat / MJ.kg⁻¹/: 46-47
- bulk density (pellets), /kg.m⁻³/: 500-550

10. STABILITY AND REACTIVITY

10.1 Conditions to avoid

The substance alone is stable at normal temperatures.
Avoid heating over 300°C. Keep away from the sources of ignition and electrostatic discharges.

10.2. Materials to avoid

Chlorine, fluorine, strong oxidizing agents, aromatic and chlorinated hydrocarbons, gasoline, and lubricating oils

10.3 Hazardous decomposition products

Decomposition under the higher temperatures in the air atmosphere may produce CO, CO₂ and H₂O.

11. TOXICOLOGICAL INFORMATION

11.1 Acute adverse effects on human health

According to current state of expert knowledge this substance is not considered as hazardous for human and has no adverse effects on human health.

Acute animal toxicity

LD₅₀ oral - rat > 3 000 mg.kg⁻¹

11.2. Sensitization

The substance has no known sensitization effects

11.3. Repeated dose toxicity

not determined

11.4. CMR effects (carcinogenicity, mutagenicity, reproduction toxicity)

The substance has no known CMR effects.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

not determined

12.2 Mobility

not determined

12.3 Persistence and degradability

This substance has no harmful effects in the environment. It is a foreign substance in the environment with very slow degradation. The degradation is mainly caused by UV irradiation. The substance is insoluble in the water.

12.4 Bioaccumulative potential

not determined

12.5 Results of PBT assessment

not determined

12.6 Other adverse effects

The product is not considered as harmful or dangerous material.

13. DISPOSAL CONSIDERATIONS

13.1 Recommended methods for the product disposal

In case of accidental spillage of the product (pellets of polymer) avoid product entering the canalization system, as it may cause mechanical blockage of the canalization system. Sweep mechanically and transport for further processing, recycling, or dispose in compliance with the relevant waste management legislation. In all other cases use in compliance with the relevant waste management legislation.

13.2 Recommended methods for the disposal

energetic waste utilization R1, material waste utilization R3

13.3. Relevant waste management legislation

Waste polyethylene is classified according the Decree of Ministry of Environment HR No. 16/2001. (VII.18.) KöM Coll., as amended, as:

Waste catalog number: 070213 Waste plastic

14. TRANSPORT INFORMATION

14.1 Transport classification

The substance is not classified as dangerous according to relevant transport regulations.

14.2 Specific precaution measures for the transport

not stated

15. REGULATORY INFORMATION

15.1 Chemical Safety Assessment

not determined

15.2 Package labeling

Not needed (the substance is not classified as dangerous according to the Act of National Council of HR No. 98/2001. (VI.15.) and the Directive 67/548/EES)

15.3 Other applicable legislation, regulations, and directives

European Union:

Regulation No. 1907/2006 of the European Parliament and of the Council (EC) concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency,

Act of the National Council of HR No. XXV /2000 Coll. of Law, on chemical substances and chemical preparations,

Act of the National Council of HR No. XLIII/2000 Coll. of Law, on waste and on amendment of certain acts,

Act of the National Council of HR No. 44/2000 (XII.27) EüM Coll. of Law, on dangerous materials and preparations on amendment of certain acts

16. OTHER INFORMATION

Access to information:

According to the Article 35, Regulation EP and EC NO. 1907/2006, workers and their representatives shall be granted access by their employer to the information provided in the safety data sheet in relation for this preparation that they use or may be exposed to in the course of their work.

Risk phrases: not applicable.

Safety phrases: 16, 22

S 16 - Keep away from sources of ignition - No Smoking!

S 22 - Do not breathe polymer dust

Changes made in the revision:

Januar 2009: e-mail modification

Statement: This material safety data sheet was prepared according to the Regulation (EC) No. 1907/2006 of the European Parliament and of the Council. It contains information important for the health and safety of the user and for the protection of the environment. This information does not replace qualitative specifications and should not be considered as a warranty of suitability and applicability of this product for any specific application. The above mentioned information is based on our current level of knowledge and is in compliance with our legislative regulations. The consumer is responsible for the adherence to the relevant regional legislative regulations.