MSDS Safety Data Sheet according to Reg. (EC) N. 453/2010

Nylon

Section 1 .Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Nylon

1.2 Company Identification

Orbi-Tech GmbH, Motlkestrasse 25, 42799 Leichlingen, Germany

Section 2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP) or Directive 67/548/EEC or 1999/45/EC
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.
This mixture is not classified as dangerous according to Directive 1999/45/EC.

2.2 Label elements

The product is put on the market on a form that encapsulates component(s) in a polymer., To our knowledge, product on this form shouldn't have any significant risk for health by inhalation, ingestion or ontact with skin or for the environment., According to European classification and labelling regulation for hazardous substances and preparations, the product is not subjected to labelling although one/several component(s) is/are classified as hazardous.

2.3 Other hazards

Potential health effects:
Acute exposure: Contact with the product, when handled at high temperatures, can cause serious burns.
Skin contact: Risk of skin sensitization.

Physical and chemical hazards:
Thermal decomposition giving toxic and corrosive products.
Decomposition products: See chapter 10

Other:
Results of PBT and vPvB assessment : No data available.

Section 3. Composition / information on ingredients

3.1 Mixtures

Chemical characterization:
Polyamide 12 (various grades)
Presence of additives
Presence of stabilizers preventing thermo-oxidation and photo-oxidation by sunlight (effects of weather)
Possible presence of : Carbon black

Section 4. First aid measures

4.1 Description of first aid measures

Inhalation:
Inhalation of vapours due to thermal decomposition : Move to fresh air. Oxygen or artificial respiration if needed. In case of persistent problems: Consult a physician.

Skin contact:
In case of skin contact Wash off immediately with soap and plenty of water.
On contact with hot product : Cool skin rapidly with cold water after contact with molten polymer. In case of adhesion, do not try to remove the product. Treat the affected areas as thermal burns. Consult a

physician.

Eye contact:
Dusts: Wash well-open eyes immediately, abundantly and thoroughly with water. Remove particles remaining under the eyelids. If irritation persists, consult an ophthalmologist.
On contact with hot product: Cool eyes rapidly with cold water after contact with molten polymer. Consult an ophthalmologist immediately.

Ingestion:
In case of problems : Consult a doctor.

Protection of first-aiders:
In case of insufficient ventilation, wear suitable respiratory equipment.

4.2 Most important symptoms and effects, both acute and delayed

Dust: Skin irritation, eye irritations and redness

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

Section 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water fog, foam,carbon dioxide (CO2).
Extinguishing media which must not be used for safety reasons: Full water jet

5.2 Special hazards arising from the substance or mixture

300 - 350 °C: possible formation of:
Monomer and oligomer (white fumes)
Thermal decomposition giving toxic and corrosive products :
Carbon monoxide, Ammonia, Amino derivatives
Temperature exceeding 500 °C :
Formation of toxic products through combustion:
Carbon oxides, Hydrogen cyanide (hydrocyanic acid), (traces)

5.3 Advice for firefighters

Special protective equipment for firefighters:
Ensure a system for the rapid emptying of containers. In case of fire nearby, remove the bags.
In the event of fire, wear self-contained breathing apparatus.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes and inhalation of dust. Wear a dust mask and safety glasses/goggles if necessary. In case of insufficient ventilation, wear suitable respiratory equipment.

6.2 Environmental precautions

Do not release into the environment. Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Recovery:
Recover the product. Sweep up to prevent slipping hazard. Rinse with water. Recover waste water for processing later.

Elimination:
Destroy the product by incineration (in accordance with local and national regulations).

Handling and storage

7.1 Precautions for safe handling

Technical measures/Precautions:
Storage and handling precautions applicable to products: Solid (pellets).
Ensure ventilation of work areas and extraction of dust or vapours likely to be given off during conversion operations (product handled when hot). Provide showers, eye-baths Provide water supplies near the point of use.

Safe handling advice:
At all stages of the operation, do not exceed the temperature at which decomposition into toxic and corrosive products will occur. Remove all sources of ignition. Avoid accumulation of static charges during transfers in metallic systems. Avoid the formation and deposition of dust. In case of dust formation, wear a dust mask. Keep well away from naked flames.

Hygiene measures:
Avoid contact with skin and eyes and inhalation of dust. Product handled when hot : Avoid inhalation of vapours. When using do not eat, drink or smoke.
Wash hands after handling. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Store away from moisture and heat to maintain the technical properties of the product. Remove all sources of ignition. Provide earthing and
safe electrical equipment.

Do not store above: 60 °C

Incompatible products:
None known.

Packaging material:
Recommended: Triplex bags (polyethylene - aluminium - polyethylene), Triplex bags (paper, aluminium, polyethylene)

Section 8 Exposure controls/personal protection

8.1 Exposure controls

Source	Value type	Value (mg/m3)	Remarks
EH40 WEL	STEL	7	
EH40 WEL	TWA	03.05.15	
ACGIH (US)	TWA	3	Inhalable fraction

Derived No Effect Level (DNEL): This information is not required.
Predicted No Effect Concentration: This information is not required.

8.2 Occupational exposure controls

General protective measures:
Ensure ventilation of work areas and extraction of dust or vapours likely to be given off during conversion operations (product handled when hot).
Respiratory protection: Product handled when hot : In case of insufficient ventilation, wear suitable respiratory equipment. In the case of hazardous fumes, wear self contained breathing apparatus.

Hand protection: Gloves (product handled in molten state)

Eye/face protection: Safety glasses/goggles (product handled in molten state) - Wear face-shield and protective clothing in case of problems during processing

Skin and body protection: Boots (product handled in molten state)

Environmental exposure controls: See chapter 6

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:		Vapour pressure:	Not applicable
Physical state (20°C):	solid	Vapour density:	Not applicable
Form:	granules	Relative density:	No data available.
Colour:	Colourless or Mass coloured	Bulk density:	550 - 650 kg/m3
Odour:	none	Water solubility:	insoluble at 20 °C
Olfactory threshold:	Not relevant	Partition coefficient:	n-octanol/water: No data available.
pH:	Not applicable	Auto-ignition temperature:	420 - 450 °C (Standard ASTM D 1929-77 (B))
Melting point/range :	174 - 178 °C		
Boiling point/boiling range :	Not applicable (decomposes on heating)	Decomposition temperature:	> 350 °C
		Viscosity, dynamic:	Not applicable
Flash point:	Not applicable	Explosive properties:	
Evaporation rate:	Not applicable	Explosivity:	Not relevant (due to the chemical structure)
Flammability (solid, gas):	No data available.	Oxidizing properties:	Not relevant (due to the chemical structure)

9.2 Other information

Solubility in other solvents: Soluble in: Formic acid (concentrate), Sulphuric acid (concentrate) , Metacresol , phenol , Benzyl alcohol

Section 10. Stability and reactivity

10.1 & 10.2 Reactivity & Chemical stability

The product is stable under normal handling and storage conditions.

10.3 Possibility of hazardous reactions

None under normal conditions of use.

10.4 Conditions to avoid

Temperatures above 60 °C
Heat, flames and sparks. Exposure to moisture. (to maintain the technical properties of the product).

10.5 Incompatible materials

Strong acids and oxidizing agents

10.6 Hazardous decomposition products

Thermal decomposition:
Decomposition temperature: > 350 °C
300 - 350 °C: possible formation of:
Monomer and oligomer (white fumes)
Thermal decomposition giving toxic and corrosive products :
Carbon monoxide, Ammonia, Amino derivatives
Temperature exceeding 500 °C :
Formation of toxic products through combustion:

Section 11. Information on toxicological effects

All available data on this product and/or the components quoted in section 3 and/or the analogue substances/metabolites have been taken into account for the hazard assessment.

11.1. Information on toxicological effects:

Acute toxicity:

Ingestion: According to its composition, can be considered as : Slightly harmful by ingestion

Dermal: According to its composition, can be considered as : Slightly harmful in contact with skin

Local effects (Corrosion / Irritation / Serious eye damage):

Skin contact: According to its composition, can be considered as : Slightly or not irritating to skin
In man: Contact with the product, when handled at high temperatures, can cause serious burns.
At high temperature, products of thermal decomposition can be irritating to skin

Eye contact: According to its composition, can be considered as : Slightly or not irritating to eyes
In man: Contact with the product, when handled at high temperatures, can cause serious burns.
At high temperature, products of thermal decomposition can be irritating to eyes
Respiratory or skin sensitisation:

Inhalation: No data available.
Skin contact:
In man : No reported cases of cutaneous sensitization in man

CMR effects: Polymer: No particular problems for man
Specific target organ toxicity :
Single exposure :
Inhalation:
In man : At high temperature, products of thermal decomposition can be irritating to respiratory system

Repeated exposure: According to its composition : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard: Not relevant

Section 12. Ecological information

12.1 Toxicity

Fish:	No data available.
Aquatic invertebrates:	No data available.
Aquatic plants:	No data available.
Microorganisms:	No data available.

12.2 Persistence and degradability

Biodegradation (In water): Inert polymer, Not biodegradable on the basis of its structure

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Other adverse effects

None known

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal of product: Do not dispose of waste into sewer. Recycle if possible. Destroy the product by incineration (in accordance with local and national regulations).
Disposal of packaging: Do not release into the environment. Recycle if possible. Destroy packaging by incineration at an approved waste disposal site (in accordance with local and national regulations).

Section 14, Transport information

14.1 UN number

Not classified as dangerous in the meaning of transport regulations.

Section 15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

UK REGULATION Chip3: Chemical (Hazard Information and Packaging for Supply) Regulations 2002

15.2 Chemical Safety Assessment

For this substance a chemical safety assessment is not required.

Section 16. Other Information

Orbi-Tech GmbH urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.