



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name Nylon 6,6 Fiber
Version # 1.1
Revision date 01-Mar-2010
MSDS Number 1868
Synonym(s) 6-6 Nylon; CORDURA® Nylon; Nylon 6-6 Fiber; Nylon Industrial Fiber; Nylon Polyamide Fiber; White Dyeable Nylon
Company information INVISTA S.à r.l.
INVISTA Building
4123 East 37th Street North
Wichita, KS 67220
Emergency Transport Emergency CHEMTREC 1-800-424-9300
Emergency outside U.S. +1-703-527-3887
Medical Emergency +1-613-348-3616
General information Product information 1-877-448-8476
Information outside U.S. +1-770-792-4221

2. Composition / Information on Ingredients

Components	CAS #	Concentration
NYLON 66 POLYAMIDE	32131-17-2	90 - 98 %
FIBER LUBRICANTS	Mixture	0 - 4 %
WATER	7732-18-5	0 - 5 %
TITANIUM DIOXIDE	13463-67-7	0 - 5 %
CARBON BLACK	1333-86-4	0 - 5 %
COLOR CONCENTRATE	Mixture	0 - 2 %

Composition comments

Preparation - not a pure substance.

May have been produced with Carbon Black. Carbon Black is not water soluble and is encapsulated. It is not extracted or released in normal processing. Therefore Carbon Black in this material does not present a hazard in normal handling, processing use and disposal.

May have been produced with Titanium Dioxide. Titanium Dioxide is not water soluble and is encapsulated. It is not extracted or released in normal processing. Therefore Titanium Dioxide in this material does not present a hazard in normal handling, processing use and disposal.

3. Hazards Identification

Emergency overview

Low hazard for usual industrial or commercial handling.

When the fiber products are cut, chopped, or manipulated in other similar handling methods, some dust may be produced.

General hazard information

This fiber may have been produced with carbon black and/or titanium dioxide. These compounds, as present in this material, are not water soluble and are encapsulated in the polymer. They are not extracted or released in normal processing and handling. Therefore these compounds are not expected to present a hazard in normal handling, processing, use and disposal.

OSHA regulatory status

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information for the safe handling and proper use of the product.

Potential health effects

Eyes

Fiber particles and dusts may be mechanically irritating when in contact with eyes. Symptoms include itching, burning, redness and tearing.

Aug. 9. 2012 2:27PM McMichael Mills

Skin

Not expected to be a primary skin irritant. Fiber particles and dusts may be mechanically irritating to skin. While irritation is not expected under normal use, prolonged exposure and continuous rubbing of fiber particles on skin may produce skin irritation. Symptoms of mechanical irritation may include redness and/or itching.

Inhalation

Health injuries are not known or expected under normal use.

Ingestion

Not a likely route of entry. Ingestion of large amounts of fibers may cause gastrointestinal blockage which can cause stomach distress.

4. First Aid Measures

First aid procedures

Eye contact

Flush eyes with water as a precaution. If irritation persists get medical attention.

Skin contact

Product is not expected to be hazardous by skin contact. Should irritation occur rinse with water.

Inhalation

No specific treatment is necessary since this material is not likely to be hazardous by inhalation. If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.

Ingestion

If swallowed, do NOT induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Consult a physician if necessary.

Notes to physician

Treat symptomatically.

5. Fire Fighting Measures

General fire hazards

This product is combustible at high temperatures.

Flammable properties

May burn, but does not ignite readily.

Extinguishing media

Suitable extinguishing media

Dry chemical, CO2, water spray or regular foam. Do not use straight streams.

Protection of firefighters

Protective equipment and precautions for firefighters

Firefighters should wear full protective clothing including self contained breathing apparatus.

Hazardous combustion products

Irritating and toxic gases or fumes may be released during a fire. Traces of hydrogen cyanide may be found in fire conditions.

Auto-ignition temperature 851 °F (455 °C) ASTM D1929

Flammability limits in air, lower, % by volume Not Determined

Flammability limits in air, upper, % by volume Not Determined

Flash point 788 °F (420 °C) ASTM D1929

6. Accidental Release Measures

Personal precautions

Spilled or displaced fibers may present a tripping hazard.

Methods for cleaning up

Sweep up or gather material and place in appropriate container.

7. Handling and Storage

Handling

Use care in handling/storage.

Storage

Keep away from heat, sparks, and flame.

Further Information

When fiber products are cut, chopped, or manipulated in other similar handling methods, some dust may be produced. Use good housekeeping methods to keep accumulation of dust to a minimum.

8. Exposure Controls / Personal Protection

Exposure guidelines

Engineering controls

Use local exhaust ventilation. Keep formation of airborne dusts to a minimum.

Personal protective equipment

Eye / face protection

Wear safety glasses with side shields.

Skin protection

Wear suitable protective clothing. When material is heated, wear gloves to protect against thermal burns.

Respiratory protection

When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate respiratory protection must be provided.

General hygiene considerations

Use good industrial hygiene practices in handling this material. Wash hands before breaks and at the end of workday.

9. Physical & Chemical Properties

Color	Based on specification.
Odor	Slight.
Auto-ignition temperature	851 °F (455 °C) ASTM D1929
Decomposition temperature	788 - 1652 °F (420 - 900 °C) 50% at 420°C; 86% at 900°C
Fammability limits in air, lower, % by volume	Not Determined
Fammability limits in air, upper, % by volume	Not Determined
Flash point	788 °F (420 °C) ASTM D1929
Melting point	491 - 509 °F (255 - 265 °C)
Molecular weight	19,000 - 30,000
Odor threshold	Not Determined
pH	Not Applicable
Solubility (H2O)	0 %
Specific gravity	1.13 - 1.25
Vapor density	na 0 (air=1)

10. Chemical Stability & Reactivity Information

Chemical stability

Stable, however, may decompose if heated.

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

This product may react with strong oxidizing agents.

11. Toxicological Information

Toxicological Information

Animal testing indicates that this material is not a skin irritant. This material has not been tested for skin sensitization. This fiber may have been produced with carbon black and/or titanium dioxide. These compounds, as present in this material, are not water soluble and are encapsulated in the polymer. They are not extracted or released in normal processing and handling. Therefore these compounds are not expected to present a hazard in normal handling, processing, use and disposal.

Component analysis - LD50

Carcinogenicity

Not listed by ACGIH, IARC, NIOSH, NTP OR OSHA. Carbon Black (airborne particles of respirable size) is a listed carcinogen. Carbon Black used in production of this material is encapsulated and not believed to have the potential to become of respirable size.

Titanium dioxide (airborne particles of respirable size) is a listed carcinogen by IARC (2B). Titanium dioxide used in products of this material is not believed to have the potential to become of respirable size.

Further information

The product itself has not been tested.

12. Ecological Information

Ecotoxicity

This product is not expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. Based on similar substances, this material is expected to be essentially non-biodegradable.

Environmental effects

Based on the physical properties of this product, significant environmental persistence and bioaccumulation would not be expected.

13. Disposal Considerations

Disposal Instructions

Dispose in accordance with all applicable regulations.

14. Transport Information

Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

General

Not regulated as dangerous goods.

15. Regulatory Information

United States Regulations

Federal Regulations

Product, as supplied, is an article under TSCA.

All components are on the U.S. EPA TSCA Inventory List.

This fiber may have been produced with carbon black and/or titanium dioxide. These compounds, as present in this material, are not water soluble and are encapsulated in the polymer. They are not extracted or released in normal processing and handling. Therefore these compounds are not expected to present a hazard in normal handling, processing, use and disposal.

State Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

Aug. 9. 2012 2:28PM McMichael Mills

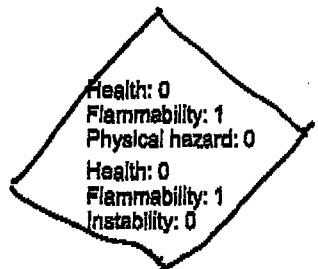
Section 302 extremely hazardous substance No

International Regulations

Not a poison under the Standard for the Uniform Scheduling of Drugs and Poisons - Australia.
Not dangerous according to the criteria found in Guidelines on Prevention and Control of Chemical Hazard - Singapore.
As an article the product does not need to be labelled in accordance with EC-directives or respective national laws.

16. Other information

HMS ratings



NFPA ratings

Disclaimer

This Material Safety Data Sheet ("MSDS") contains selected information about a specific INVISTA product or group of products. It relates only to the identified product and any identified uses and is based on information available as of the date hereof. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. THIS MSDS WAS PREPARED PURSUANT TO GOVERNMENT REGULATIONS THAT IDENTIFY SPECIFIC TYPES OF INFORMATION TO BE PROVIDED HEREIN. IT IS THEREFORE NOT INTENDED AS, AND DOES NOT CONTAIN, A COMPLETE STATEMENT OF, AND DOES NOT CONSTITUTE A REPRESENTATION, WARRANTY OR GUARANTY WITH REGARD TO, A PRODUCT'S CHARACTERISTICS, USES, QUALITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THE SUITABILITY, SAFETY, EFFICACY, HAZARDS OR HEALTH EFFECTS OF THE PRODUCT, WHETHER USED SINGULARLY OR IN COMBINATION WITH ANY OTHER PRODUCT, EXCEPT TO THE EXTENT REQUIRED BY THE RELEVANT LAW AND REGULATIONS. Purchasers and users of the product are responsible for determining that the product is suitable for the intended use and that their workers and the general public are advised of any risks resulting from such use. Nothing contained in this MSDS shall be construed to modify any of the commercial terms pursuant to which the product was sold by INVISTA including, but not limited to, terms and conditions addressing each party's respective rights and obligations with regard to warranties, remedies and indemnification.

Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of the MSDS, and any supplementary MSDS or written warnings that they may receive from INVISTA from time-to-time. In addition, if purchasers and users believe or have reason to believe that the MSDS or other information provided to them by INVISTA is inaccurate or in any way insufficient for any purpose, they should immediately notify INVISTA of the same, and of the basis for their belief (for example, studies, data, reports of incidents, etc.) so that INVISTA can determine whether modification or supplementation of the MSDS, or other measures, are appropriate. Failure of purchasers and users to timely provide such notice shall be deemed a waiver by purchasers and users of any and all claims, demands or causes of action, including causes of action based on an alleged failure to warn, for personal injury or damage to the environment or property arising from or attributable to the use of product.

This disclaimer shall be effective to the extent allowed by law. Should any provision be deemed to be ineffective or unenforceable, that provision shall be deemed severed from the disclaimer and the remaining provisions shall continue to have full force and effect.

MSDS sections updated

- Product and Company Identification: Product and Company Identification
- Hazards Identification: Emergency overview
- Hazards Identification: Storage
- Hazards Identification: Response
- Hazards Identification: Prevention
- Hazards Identification: Disposal
- Fire Fighting Measures: Special protective equipment for firefighters
- Physical & Chemical Properties: Physical & Chemical Properties
- Regulatory Information: Canadian regulations
- Issue date 01-Mar-2010



Safety Data Sheet

Spandex

Revision 15.03.2006

1. Identification of the Substance/Preparation and the Company/Undertaking

Chemical characterization Multi-block Copolymer with Urethan and Urea bonds

CAS Number See the data described in #2

Producer/Supplier Hyosung Corporaton
450, Gongdeok-Dong, Mapo-Gu
Seoul, Korea

Phone Number +82-2-707-7455

Telefax +82-2-707-7103

2. Composition/Information on Ingredients

CAS Number	Product Name	Content
036443-68-2	Ethylanebis(oxyethylene) bis[3-(5-tert-butyl-4-hydroxy-m-tolyl)propionate]	1.43%
26190-06-1	Polytetramethylene ether glycol	76.92%
78-90-0	Propylene diamine	0.35%
105-16-8	2-(Diethyl amino) ethyl methacrylate	0.50%
1817-70-0	Hombitan-Anatase	0.10%
557-04-0	Pharmacopoeia Magnesium Stearate	0.45%
85095-61-0	1,1,1,1-Tetramethyl-4,4-(methylene-di-p-phenylene) diisocyanate	0.50%
111-40-0	Diethylenetriamine	0.10%
101-68-8	Methylene bis-phenyl diisocyanate	17.33%
107-15-3	Ethylenediamine	1.14%
127-19-5	Dimethyl Acetamide	0.01%
109-89-70	Diethylamine	0.18%
68649-12-7	Poly(1-decane), hydrogenated	1.00%
Total		100.00%

3. Hazards Identification

No serious or notified adverse effects may be caused.

4. First Aid Measures

Skin contact

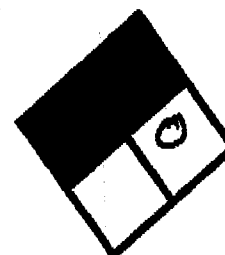
No harmful effects may be caused.

Eye contact

No harmful effects may be caused

Inhalation & Ingestion

Not applicable



Lab Safety Supply Inc.

5. Fire-Fighting Measures

Suitable extinguishing media : Water spray, Carbon dioxide, Dry powder

Safety Data Sheet

Spandex

Revision 15.03.2006

Extinguishing media which must not be used for safety reasons

Not applicable

Exposure hazards

Not applicable

Special protective equipment for firefighters

Not applicable

Hazardous decomposition product

Oxides of carbon, Toxic gases/vapours

6. Accidental Release Measures

Personal & Environmental precautions

Not applicable

Methods for cleaning up

Not applicable

7. Handling and Storage

Handling & Storage

No special cautions are necessary

8. Exposure Controls/Personal Protection

Exposure limit

Not applicable

Technical measures/Precautions

Not applicable

Respiratory protection

Not applicable

Hand protection

Not applicable

Eye protection

Not applicable

Skin and body protection

Not applicable

9. Physical and Chemical Properties

Form

yarn

Color

clear (bright)

Odor

odourless

Melting/Freezing temperature

210°C (Approximately at 190°C, degradation occurs)

Boiling point/range

Not applicable

Density 20°C

0.95

Safety Data Sheet

Spandex

Revision 15.03.2006

Flash point	Not applicable
Ignition temperature	Not applicable
Oxidising property	No recognisable oxidization occurs
Assessment for self-ignition	No self-ignition
Water solubility 20°C	Not applicable
Vapor pressure 20°C	Not applicable
pH-value 1% suspension in water 20-25°C	7.5
Explosive properties	Not applicable

10. Stability and Reactivity

Decomposition temperature	At around 190°C, Decomposition starts
Conditions to avoid	Not applicable
Materials to avoid	Strong acids, bases and oxidising agents
Hazardous decomposition products	Oxides of carbon, Nitrogen, Toxic gases

11. Toxicological information

Acute oral toxicity	Not applicable
Acute dermal irritation/corrosion	Not irritant
Acute eye irritation/corrosion	Not irritant
Acute skin sensitization	Not sensitising

12. Ecological information

Acute toxicity to fish	Not tested
Acute toxicity to daphnia	Not tested
Acute toxicity to bacteria	Not tested
Acute toxicity to algae	Not tested
Biodegradability	Not biodegradable

Ecotoxic effect

Do not discharge product unmonitored into the environment

Safety Data Sheet

Aug. 9, 2012 2:30PM McMichael Mills
HP LASERJET FAX

Spandex

Revision 15.03.2006

13. Disposal Considerations

- Waste from residues/unused product
 No special treatment required
- Contaminated packaging
 No special treatment required

14. Transport Information

- Flash point Not applicable
- ADR/RID Class : Free
- IMO Class : Free
- ICAO Class : Free