



## Product information

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### Product full identity:

Polyamide 66

Extruded Nylon 6.6 offers higher strength, stiffness and wear resistance compared to Nylon 6, with better creep resistance at a higher operating temperature (-30°C to +80°C). This material is food compliant.

### Properties

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- » Higher mechanical strength, stiffness, heat and wear resistance than Nylon 6
- » Machines and cuts better than Nylon 6
- » Food compliant

### Applications

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- » Gears
- » Nuts
- » Valve seats
- » Bushes
- » Electrical insulators
- » Screws
- » Bearings
- » Gaskets

### This document contains

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- » Technical Datasheet (Page 2)
- » Chemical Datasheet (Page 3)
- » Safety Datasheet (Pages 4-5)

For any further information regarding food, fire and water certificates then please contact the sales team on 0114 256 0889

## Technical Properties

Physical Properties	Test	Unit	Result
1. Specific gravity	ISO 1183	g/cm <sup>3</sup>	1.14
2. Water absorption	ISO 62	%	8
3. Maximum service temp. Upper temp limit (no stronger mechanical stress involved)	-	°C	95
Lower temp limit	-	°C	-30
Mechanical Properties	Test	Unit	Result
1. Tensile strength at yield	ISO 527	MPa	90
2. Elongation at yield	ISO 527	%	-
3. Tensile strength at break	ISO 527	MPa	-
4. Elongation at break	ISO 527	%	>40
5. Impact strength	ISO 179	kJ/m <sup>2</sup>	no break
6. Notch impact strength	ISO 179	kJ/m <sup>2</sup>	6
7. Ball indentation / Rockwell hardness	ISO 2039-1-2	MPa	160 / M88
8. Shore-D	DIN 53505	-	-
9. Flexural strength	ISO 178	MPa	2800
10. Modulus of elasticity	ISO 527	MPa	3100
Thermal Properties	Test Method	Unit	Result
1. Vicat-softening point VST/B/50	ISO 306	°C	-
2. Heat deflection temperature HDT/B	ISO 75	°C	-
HDT/A	ISO 75-2	°C	85
3. Coefficient of linear thermal expansion	ISO 11359	k <sup>-1</sup> *10 <sup>-4</sup>	0.8
4. Thermal conductivity at 20 °C	DIN 52612	W/(m*K)	0.28
Electrical Properties	Test Method	Unit	Result
1. Volume resistivity	IEC 60093	Ω x m	10 <sup>12</sup>
2. Surface resistivity	IEC 60093	Ω	10 <sup>13</sup>
3. Dielectric constant at 1MHz	IEC 60250	10 <sup>6</sup> Hz	3.3
4. Dielectric loss factor at 1 MHz	IEC 60250	10 <sup>6</sup> Hz	0.020
5. Dielectric strength	IEC 60243-1	kV/mm	27
6. Tracking resistance	IEC 60112	-	600
Additional Data	Test Method	Unit	Result
1. Bondability	-	-	+
2. Food compliance	FDA	-	+
3. Flammability	UL 94	-	HB (V 2*)

All The above information is for guide purposes only. The data has been taken from standard test results provided by our manufacturers.

\*= at thickness of 3mm

### Key:

Yes	Limited	No data
+	0	-

## Chemical Properties

Agent	Conc %	Working Temp		Agent	Conc %	Working	Temp
		20°C	60°C				
Acetic Acid	100	-	-	Hydrofluoric acid	40	-	-
Acetone	100	o	o	Hydrogen peroxide	10	+/o	-
Ammonia	Conc.	+/o	-	Hydrogen Sulphide		+	
Ammonium chloride		+		Isopropyl Alcohol	100	+	+
Amyl Alcohol		+		Mercurochrome		-	-
Benzene		+	+	Methyl alcohol	100	+	
Bleaching Solution	12,5 Cl	-	-	Methyl ethyl ketone	100	+	
Boric Acid	100	+/o	o	Methylene chloride	100	o	
Brake Fluid		+	+	Nitric acid	10	-	-
Butyl Acetate		+		Nitric acid	50	o	
Calcium Chloride		+	+	Nitrobenzine		o	
Carbon disulphide	100	+	-	Oxalic Acid		-	-
Carbon Tetrachloride		+		Ozone, gas	ca. 0,5 ppm	+	+
Chlorine, gas	100	-		Paraffin Oil	100	o	-
Chlorobenzene	100	+		Perchlorethylene		+	
Chloroform		-	0/-	Petroleum	100		
Citric Acid	10	+		Petroleum, aromatic free	100	-	-
Cresol		-	-	Phenol, aqu	ca.9	-	-
Cyclohexanone	100	+		Phosphoric Acid	50	o	+
Cyclohexene	100	+	+	Potassium hydroxide liquor	50		
Diesel Fuel		+	+	Propyl alcohol		+	o
Ethyl acetate	100	+		Pyridine		+	+
Ethyl alcohol	96	+	+	Silicone oil		+	+
Ethylene Chloride	100	+		Sodium carbonate, aqu		+	+
Formic Acid	10	-	-	Sodium chloride, aqu		+	
Frost protection agent		+	+	Sodium Hydroxide liquor	60	o	
Fuel, aromatic free		+	+	Sodium hydrogen sulphite		+	
Glycerine	100	+	+	Sodium nitrate, aqu		+	
Glycol	100	+	o	Sodium thiosulfate			
Heating oil		+	+	Sulphuric Acid	96	-	-
Heptane	100	-	-	Tetrahydrofuran	100	+	
Hydrochloric acid	10	-	-	Toluene	100	+	+
Hydrochloric acid	conc.	-	-	Trichlorethylene	100	-	-
				Xylene		-	-

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### Key:

Yes	Limited	No data
+	o	-

## Safety Properties

### Substance / preparation and company detail

Nylon  
Direct Plastics Limited  
Rother Valley Way,  
Holbrook,  
Sheffield,  
S20 3RW  
0114 2560889

### Composition / indications to components

**Chemical characterization :** Polyamide 66 (PA66)

**Hazardous substances :** Product contains no hazardous ingredients liable to be disclosed.

### Possible dangers

**Classification :** Not classified

**Physical/ chemical hazards :** Flammable

**Health risks :** Dust can cause mechanical irritation.

**Hazards for the environment:** Based on our information, there is no danger to the environment.

The product is according to Directive 1999/45/EC and its annexes are not classified as dangerous.

### First-aid measures

**General information :** The product is being classified as non-toxic.

**In case of inhalation :** In case the plastic burns and combustion gases are inhaled, remove person to fresh air and keep warm and get medical help if necessary.

**In case of skin contact :** Burns caused by molten material on skin need to be rapidly cooled down with water; do not attempt removal of plastic without medical assistance. If irritation develops, seek medical attention.

**In case of eye contact :** Flush eyes well with copious quantities of water. Seek medical attention, if irritation persists.

**In case of ingestion :** The product is non-toxic; no first aid procedures are required.

### First-fighting measures

**Suitable extinguishing media :** Water, foam, gaseous and dry extinguishing media

**Particular endangerments by :** Hazardous combustion products may emerge, apart from harmless

**Fire fighting and hazardous Water (H<sub>2</sub>O);** carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO) and combustion products oxygen how hydrogen cyanide (HCN). Formation of further decomposition and oxidation products depends upon the fire conditions. Under special fire conditions traces of other toxic substances are possible. Fire fighting: Approved pressure demand breathing apparatus and protective clothing should be used for all fires. Additional Information: Residues after the fire, after appropriate rules dispose.

### Measures in case of unintended release

**Personal precautions :** N/A

**Environmental precaution :** N/A

**Methods for cleaning up :** Mechanical removal

### Handing and storage

**Advice on safe handling:** During machining of the stock shapes, evacuate swarf to prevent slipping or tripping.

**Storage:** Store inert product dry and cool. Keep storage and working areas sufficiently ventilated. Keep away form source of flame, heat and ignition. Due to the risk of collapsing, do not stack more than 2 pallets on to of each other. Pallets should not stack on to of each other along aisles.

## Safety Properties

### Limitation of exposition

**Ingredients with occupational exposure limits to be monitored :** none

**Personal (body) protection :**

**General protective and :** Keep the workplace sufficiently ventilated; thereby smoking;

Hygiene measures eating and drinking are not allowed.

Continuous supply of fresh air to the workplace together with removal of processing fumes through exhaust systems is recommended. Avoid breathing in gaseous degradation products and dust that may result by material overheating.

**Hand protection :** Safety gloves in case of contact with warm material

**Eye protection :** Safety goggles or shield during machining

**Body protection :** Working clothes

**Respiratory protection :** Adequate ventilation at workplace is required

### Physical and chemical characteristics

**Physical state** (rods, hollow rods and plates)

**Aggregate :** solid

**Colour :** product-specific

**Odour :** slight, product specific

Safety related facts

**Boiling point :** N/A

**Melting point :** 260 °C (DIN/EN/ISO 3146)

**Corrosion temperature :** > 350 °C

**Flash point :** > 390 °C

**Self ignition temperature :** > 400 °C (ASTM D1929)

**Explosion hazard or limit :** non explosive

**Oxidizing characteristics :** None

**Density (20 °C) :** 1.14 g/cm<sup>3</sup> (ISO 1183)

**Solubility (in Water 20 °C) :** insoluble

**Viscosity :** N/A

**Additional Information :** None

### Stability and reactivity

**Conditions to avoid :** Temperatures above melting point

**Material to avoid :** Strong oxidant

**Hazardous decomposition :** Carbon monoxide CAS-Nr. 630-08-0

products Hydrogen cyanide (HCN) CAS-Nr. 74-90-8

Ammonia (NH<sub>3</sub>) CAS-Nr. 7664-41-7

### Toxic information

**Toxicology :** Based on our experience and information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

**Primary Irritation on skin :** N/A

**Primary Irritation on eyes :** N/A

**Sensitization :** not known

**Practical Tests :** N/A

**Additional information :** N/A

### Ecological information

The material does not harm the environment but is not biologically degradable.

### Waste-disposal information

The product must be disposed in accordance with the local authorities.

### Transport information

Not classified as hazardous under transport regulations.

## Safety Properties

### Regulations

**European regulations (Identification) :**

The product does not require a hazard warning label in accordance with EC directives.

**National regulations (Germany) :**

**GefStoffV** : No identification necessary

**WHG** : No water imperilling in terms of VwVwS

### Further information

The information is based on our current knowledge. They are meant to describe our products in respect to safety requirements. They do not represent any guarantee of the described product in the sense of the legal guarantee regulations.