



Dutch Filaments®

Safety Data Sheet

According to EU Directive 1907/2006

Product name: PP@df

Date of issue: 20 July 2017

Version: 1.0

1. Identification of the substance/preparation and of the company

- 1.1 Trade name:**
PP@df
- 1.2 Use of the product:**
3Dprinter Filament
- 1.3 Supplier:**
Dutch Filaments BV
Achterdijk 33
5705CB Helmond, The Netherlands
Phone: +31(0)492 210 210
Emergency phone number: +31 (0)30 274 8888

2. Hazards identification

- 2.1 Classification of the substance or mixture**
According to Regulation (EC) No 1272/2008 [CLP]
No need for classification according to GHS criteria for this product
- 2.2 Label elements**
None
- 2.3 Other hazards**
Physical / Chemical Hazards:
May form combustible dust concentrations in air (during processing/handling). Material can accumulate static charges which may cause an ignition. Spilled pellets present a slipping hazard on hard surfaces. Contact with hot material can cause thermal burns which may result in permanent damage or blindness.
- Health Hazards:
If dust is generated, it could scratch the eyes and cause minor mechanical irritation to the respiratory tract. No adverse effects due to inhalation are expected. When heated, the vapour/fumes given off may cause respiratory tract irritation.
- Environmental Hazards:
No significant hazards. Material does not meet the criteria for PBT or vPvB in accordance with REACH Annex XIII.

3. Composition/information on ingredients

3.2. Mixtures

No Hazardous Substance(s) required for disclosure.

NOTE: The product may contain varying levels of additives such as slip and anti-blocking agents, antioxidants and stabilisers.



Safety Data Sheet

According to EU Directive 1907/2006

Product name: PP@df

Date of issue: 20 July 2017

Version: 1.0

4. First aid measures

4.1 Description of first aid measures

General Advice

No hazards which require special first aid measures.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if symptoms occur.

Skin Contact

Wash contact areas with soap and water. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

Ingestion

Rinse mouth. Get medical attention immediately if symptoms occur.

Inhalation

At ambient/normal handling temperatures, no adverse effects due to inhalation of dust are expected. In case of adverse exposure to vapours and / or aerosols formed at elevated temperatures, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest.

Protection of first-aiders

Use personal protective equipment. Avoid contact with skin, eyes and clothing.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: No acute and delayed symptoms and effects are observed.

4.3 Indication of any immediate medical attention and special treatment needed

The need to have special means for providing specific and immediate medical treatment available in the workplace is not expected.

5. Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Water spray, Foam, Dry powder, Carbon dioxide (CO₂).

Unsuitable extinguishing media :

Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products formed under fire conditions: Flammable hydrocarbons, Incomplete combustion products, Oxides of carbon, Smoke, Fume.

5.3 Advice for fire fighters

Fire fighting measures

Assure an extended cooling down period to prevent re-ignition. Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards:



Dutch Filaments®

Safety Data Sheet

According to EU Directive 1907/2006

Product name: PP@df

Date of issue: 20 July 2017

Version: 1.0

Explosion: Avoid generating dust; fine dust dispersed in air in sufficient concentration and in the presence of an ignition source is a potential dust explosion hazard.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Avoid contact with spilled material. Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (for example, clearing dust surfaces with compressed air). Prevent dust exposure to ignition sources. For example, use non-sparking tools and prohibit smoking, flares, sparks or flames in immediate area. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

6.2 Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and materials for containment and cleaning up

Land Spill:

Spilled pellets present a slipping hazard on hard surfaces. Prevent dust cloud.

Water Spill:

Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

6.4 Reference to other sections

Refer to section (8)

7. Handling and storage

7.1 Handling

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dust from material can accumulate electrostatic charges due to friction from transfer and mixing operations and cause an electrical spark (ignition source). Provide adequate precautions to ignition sources, such as electrical grounding and bonding, inert atmosphere or non-sparking tools. However, bonding and grounds may not eliminate the hazard for static accumulation. Consult local applicable standards for guidance. Avoid elevated temperatures for prolonged periods of time. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Prevent small spills and leakage to avoid slip hazard. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Care should be taken when storing and handling this product. Apart from the specific nature of the polymer product, conditions such as humidity, sunlight and temperature have an influence on the way the product behaves during storage and handling. Special attention should be paid to avoid



Safety Data Sheet

According to EU Directive 1907/2006

Product name: PP@df

Date of issue: 20 July 2017

Version: 1.0

inappropriate stacking of palletised bags or other package units. Indeed, polymer products may be dimensionally unstable under certain conditions. Avoid conditions generating heat during transfer operations. This material is a static accumulator.

7.2 Conditions for safe storage, including any incompatibilities

The type of container used to store the material may affect static accumulation and dissipation. For resins having a softening point below 80°C, prolonged storage above 25°C will cause remassing. For resins having a softening point between 80 and 90°C, prolonged storage above 30°C will cause remassing.

8. Exposure controls/personal protection

8.1 Control parameters

For dusty conditions, ACGIH recommends for insoluble and poorly soluble particles not otherwise specified an 8-hour TWA of 10 mg/m³ (inhalable particles), 3 mg/m³ (respirable particles).

Note: Information about recommended monitoring procedures can be obtained from the relevant agency(ies)/institute(s):

UK Health and Safety Executive (HSE).

8.2 Exposure controls

Appropriate Engineering Controls

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Adequate ventilation should be provided so that exposure limits are not exceeded.

SPECIAL PRECAUTIONS: Should significant vapours/fumes be generated during thermal processing of this product, it is recommended that work stations be monitored for the presence of thermal degradation by-products which may evolve at elevated temperatures (for example, oxygenated components). Processors of this product should assure that adequate ventilation or other controls are used to control exposure. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product are designed and maintained to minimize dust generation and accumulation. Ensure that dust-handling systems (such as exhaust ducts, dusts collectors, vessels, and processing equipment) are designed to minimize the potential for dust ignition and prevent explosion propagation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection:

If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator



Safety Data Sheet

According to EU Directive 1907/2006

Product name: PP@df

Date of issue: 20 July 2017

Version: 1.0

selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Particulate air-purifying respirator approved for dust or oil mist is recommended. European Committee for Standardization (CEN) standards EN 136, 140 and 405 provide respirator masks and EN 149 and 143 provide filter recommendations.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection:

Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If product is hot, thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves. CEN standards EN 420 and EN 374 provide general requirements and lists of glove types.

Eye Protection:

If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection:

Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If product is hot, thermally protective, chemical resistant apron and long sleeves are recommended.

Specific Hygiene Measures:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Solid Filament
Odour	Odourless to mild
Colour	depending on product grade
Odour threshold	No information available
pH	Not applicable



Safety Data Sheet

According to EU Directive 1907/2006

Product name: PP@df

Date of issue: 20 July 2017

Version: 1.0

Melting/freezing point	No information available
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	UEL: No data available LEL: No data available
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	No information available
Solubility(ies)	Negligible
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	No information available
Decomposition temperature	No information available
Viscosity	Not applicable
Explosive properties	none
Oxidizing properties	none

9.2 Other Information

Density:

850 kg/m3 (7.09 lbs/gal, 0.85 kg/dm3) - 900 kg/m3 (7.51 lbs/gal, 0.9 kg/dm3) [ASTM D1505]

Molecular Weight:

40000 - 400000

Hygroscopic:

No

10. Stability

10.1 Reactivity: No information available

10.2 Chemical stability:
Material is stable under normal conditions.

10.3 Possibility of hazardous reactions:
No hazardous reactions observed under normal handling and storage conditions

10.4 Conditions to avoid:
Avoid elevated temperatures for prolonged periods of time.

10.5 Incompatible materials:
Fluorine, Strong oxidisers

10.6 Hazardous decomposition products
Material does not decompose at ambient temperatures

11. Toxicological information

11.1 Information on toxicological effects



Dutch Filaments®

Safety Data Sheet

According to EU Directive 1907/2006

Product name: PP@df

Date of issue: 20 July 2017

Version: 1.0

Acute toxicity:

Ingestion: No known effect.

Skin Contact : No known effect.

Inhalation : No known effect.

Skin Corrosion/Irritation

No known effect.

Serious eye damage/irritation

May cause mild, short-lasting discomfort to eyes.

Respiratory or skin sensitisation

No known effect.

Germ Cell Mutagenicity

Not known to cause heritable genetic damage.

Carcinogenicity

Contains no ingredient listed as a carcinogen.

Reproductive Toxicity

No known effect

STOT-single exposure

No known effect.

STOT-repeated exposure

No known effect.

Aspiration Hazard

No known effect.

OTHER INFORMATION.

For the product itself:

Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes and respiratory tract.

Contains:

Additives that are encapsulated in the polymer. Under the normal conditions for processing and use of this polymer the encapsulated additives are not expected to pose any health hazard. However, grinding of the polymer is not recommended without the use of appropriate measures to control exposure (see Section 8 - Engineering Controls).

12. Ecological information

12.1 Toxicity

Contains no substances known to be hazardous for the environment.

12.2 Persistence and degradability

Material -- Expected to be persistent.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

Material -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

12.5 Results of PBT and vPvB assessment



Dutch Filaments®

Safety Data Sheet

According to EU Directive 1907/2006

Product name: PP@df

Date of issue: 20 July 2017

Version: 1.0

This product is not, or does not contain, a substance that is a PBT or a vPvB.

12.6 Other adverse effects

No information available.

13. Disposal considerations

13.1 Waste treatment methods

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Waste from residues / unused products

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

REGULATORY DISPOSAL INFORMATION

European Waste Code: 07 02 13

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

14. Transport information

Product has been classified as being non-dangerous substance according to transport regulations ADR, RID, IMDG, IATA/ICAO

14.1 UN number

Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing Group

Not applicable

14.5 Environmental hazards

No additional data is available

14.6 Special precautions for user

No data available

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not evaluated

15. Regulatory information

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

Applicable EU Directives and Regulations:



Dutch Filaments®

Safety Data Sheet

According to EU Directive 1907/2006

Product name: PP@df

Date of issue: 20 July 2017

Version: 1.0

1907/2006 [... on the Registration, Evaluation, Authorisation and Restriction of Chemicals ... and amendments thereto]
689/2008/EC [...concerning the export and import of dangerous substances and amendments thereto]
1272/2008 [on classification, labelling and packaging of substances and mixtures.. and amendments thereto]

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for one or more substances present in the material.

16. Other information

Information is referenced from other manufacturers.

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and Regulation (EC) No. 2015/830. Label element according to Regulation (EC) No 1272/2008.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.