

data sheet for fiber products

2/03

Date of issue: 01. Juli 2008

Revised on: 01.07.08
Page 1 of 5

1. Identification of the product and of the company	
Identification of the product	DRALON Acrylic Fiber X-Types Staple Fibers X101, X251
Use of the product	Textiles sector
Company identification	dralon GmbH Postfach 10 04 85 D-41522 Dormagen
Telephone: Responsibility:	+49 2133 – 515130 thomas.kokoschka@dralon.com
Emergency telephone	+49 151 – 16237900 (LvD dralon GmbH)
2. Hazards identification classification	
	Hazard designation not applicable. The fibres and tow are not subject to the requirement to label products precisely and are not reactive under normal environmental conditions.
3. Composition/Information on ingredients	
The following data are valid as orientation for the entire titre area.	
chemical characterization	>= 96.9 weight-% polyacrylonitrile (PAN) CAS no: 26658-88-8
components of the product	max. 2.0 weight-% titanium dioxide (dull) CAS no: 13463-67-7 max. 0.8 weight-% preparation max. 0.3 weight-% N,N-Dimethylformamide (DMF) (remaining solvent) CAS no: 68-12-2 EINECS: 200-679-5 classification: T (R61-21/22-36)
For additional information about DMF, see chapter 11.	
4. First aid measures	
In the event of inhaling poisonous fire effluents during a smouldering fire, medical treatment is immediately necessary.	
5. Fire-fighting measures	
Suitable extinguishing media	All fire-extinguishing agents are suitable.
Extinguishing media which shall not be used for safety reasons	Water, if the fire has been caused by an electrical short circuit.
Special protective equipment for fire-fighters	While fighting fires in smoke-filled rooms, use isolating breathing apparatus as respiratory protection. (Respirators that are independent of the ambient air)
Special exposure hazards arising from the substance or preparation itself, combustion product or resulting gases	During fires, the hazard-determining smoke gases are carbon monoxides and nitrogen oxides. Under certain fire-conditions, especially in the case of a smouldering fire, small amounts of other poisonous gases such as hydrocyanic acid cannot be ruled out. Do not inhale fire fumes.
(continued)	

data sheet for fiber products

2/03

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**DRALON Acrylic Fiber X-Types
Staple Fibers X101, X251**

Page 2 of 5

(continuation)	
<p>Additional notices: It is to be assumed that the fire-extinguishing water contains a proportion of organic substances as TOC (Total Organic Carbon) or CSB/COD (Chemical Oxygen Demand) due to the decomposition products that emerge during a fire. As the concentration of water-endangering matter naturally depends on the fire behaviour and the amount of extinguishing water, it is recommended to collect fire-extinguishing water during large fires – as far as possible. Before draining into the sewage collection system, the consent of the competent authorities is to be obtained. No exceptional difficulties are expected for the functioning of biological sewage treatment works.</p>	
<p>6. Accidental release measures Methods for cleaning up</p>	<p>Carefully sweep up the released product. Examine for reusability or dispose as waste in accordance with the regulations.</p>
<p>7. Handling and storage Precautions for safe handling</p> <p>Precautions for fire and explosion protection</p> <p>Precautions for safe storage</p> <p>–conditions of storage</p>	<p>The packing is to be removed with observance of the safety regulations. Fibre bales are packed under pressure. While opening, the danger of a direct or indirect injury exists through cutting wires or other winding materials. Dependent on the spatial and technical circumstances, personal protective gear, such as complete face, head, and hand protection is to be used and the safety clearances are to be maintained during the opening of bales or other packaging. Instruction of the personnel is necessary.</p> <p>Avoid or eliminate fibre fly. Ensure sufficient ventilation and extraction at the workplace. Keep away from ignition sources. Observe the consequences of electrostatic charges.</p> <p>All delivery-units are to be secured during storage, especially while stacking, in such a way that they cannot be damaged through slippage or falling-down and cause injuries.</p> <p>Store preferably in compact form (bales). If possible, no material storage in open form, because of increased flammability risk. Storage classes (based on VCI (German Association of Chemical Industries)): 11 (combustible solids).</p>
<p>8. Exposure controls / personal protection Exposure limit values</p> <ul style="list-style-type: none"> - Dust, respirable - Dust, inhalable - N,N Dimethylformamide (DMF) <p>Occupational exposure controls</p>	<p>Germany (TRGS 900) AGW: 3 mg/m³ Germany (TRGS 900) AGW: 10 mg/m³</p> <p>Germany (TRGS 900) AGW: 30 mg/m³ = 10 ppm Germany (TRGS 903) BAT: 35 mg/l</p> <p>DMF and preparation, at higher temperatures (130-190 °C), can vaporize during heat treatment.</p>
(continued)	

data sheet for fiber products

2/03

Date of issue: 01. Juli 2008

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**DRALON Acrylic Fiber X-Types
Staple Fibers X101, X251**

Page 3 of 5

(continuation)	
<ul style="list-style-type: none"> – collective protection measures – individual protection measures 	<p>Ensure good ventilation at the workplace during processing in order to prevent a health hazard through vapours. Regular cleaning of the machines, workrooms and clothing.</p> <p>Thoroughly wash hands with water and soap before eating or smoking and at the end of work. Avoid inhalation of dusts. Do not eat, drink or smoke during work.</p>
9. Physical and chemical properties	
General informations	
<ul style="list-style-type: none"> - Appearance: - Colour: - Odour: 	<p>solid (Staple fibre) white odourless</p>
Important health, safety and environmental information	
<ul style="list-style-type: none"> - Melting point: - Density: - Vapour pressure: - Solubility in water: - Flash point: - Self-ignition temperature: - External ignition temperature: 	<p>polyacrylonitrile does not melt 1.18 g/cm³ at 20 °C fibres are not vaporizable at 20 °C fibres are not water soluble at 20 °C not applicable (with preparation) ca. 485 °C (with preparation) 220-250 °C</p>
Tested in accordance with	
DIN 51794	
10. Stability and reactivity	
Conditions to avoid	
<ul style="list-style-type: none"> – Temperature 	<p>Under thermal stress, residual DMF and the preparation application can escape from the fibres. At 190 °C initial thermal decomposition of the fibres.</p>
Materials to avoid	
<p>The product can be decomposed through strongly alkaline mediums during long exposure and at higher temperatures.</p>	
Hazardous decompositions products	
<p>The most important pyrolysis and combustion product is carbon monoxide. Along with that, carbon dioxide, water, ammonia, nitrile, hydrocyanic acid and lower hydrocarbons are found.</p>	
11. Toxicological information	
Accute effect	
<p>The products are non-toxic. Based on the tests on skin and mucous membrane tolerance in accordance with the OECD norm, the applied preparations are not irritating.</p>	
CMR effects	
<p>No harmful impairments have become known up to now when the fibre products are used as intended. If the products are intended to be used for special applications, e.g., in the food-processing industry, hygiene, medical or surgical sectors, please contact the manufacturer in the first instance.</p>	
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data sheet for fiber products

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Revised on: 01.07.08

**DRALON Acrylic Fiber X-Types
Staple Fibers X101, X251**

Page 4 of 5

(continuation)	
Additional data on residual N,N-Dimethylformamide (DMF):	
<p>In the German ordinance on hazardous substances and corresponding EU directives, DMF is classified as a category 2 reproduction-endangering (reproduction toxic) substance. Accordingly, indications exist from animal experiments that exposure of a pregnant woman to the substance can lead to a harmful effect on the development of the descendants. DMF is harmful when inhaled and after contact with the skin and irritates the eyes.</p> <p>Further information on DMF: see also chapters 16.</p>	
12. Ecological information	
Mobility	
- Polymer	Not water soluble
- Preparation/Residual solvent	During further processing using water, the accruing waste-water is to be fed to a purification plant in accordance with government regulations.
Degradability	The residual solvent created during the hot/wet processing of the staple fibres or tow articles that reaches the water is easily biologically degradable as based on OECD 301 E. The preparations are over 90 % eliminable in accordance with OECD 302B (Zahn-Wellens method; 7 days). The staple fibres and tow are not hazardous to water in the sense of §19g, para. 5 WHG (Water Resources Act).
13. Disposal considerations	
Appropriate methods of disposal	Examine the reusability or dispose as waste in accordance with the regulations. With observation of the local government regulations, it can be fed to a suitable depot or incineration.
Utilization	Thermal utilization In the bomb calorimeter specified combustion-heat: Upper calorific value: 30,000 kJ/kg Lower calorific value: 29,000 kJ/kg
Ordinance on the European waste list – Waste List Ordinance AVV	04 02 21 (waste from untreated textile fibres)
14. Transport information	
- GGVSee/IMDG-Code	Not hazardous material
- GGVSE, RID/ADR	Not hazardous material
- ADNR	Not hazardous material
- ICAO/IATA-DGR	Not hazardous material
Additional information	Keep dry. Keep separate from food, stimulants, acids and lye.
15. Regulatory information	
EU directives	No identification in accordance with the ordinance on hazardous substances and according EU directives required.
Domestic regulations	
Water Hazard Classification (WGK):	not hazardous to water

data sheet for fiber products

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Revised on: 01.07.08

**DRALON Acrylic Fiber X-Types
Staple Fibers X101, X251**

Page 5 of 5

16. Other information

Due to a consequence of production, Dralon X still contains slight residual amounts of the solvent N,N-Dimethylformamide (DMF), which could be released during the processing of tow and fibres, especially at high temperatures.

Ensure sufficient extraction and ventilation of the workplace during further processing in order to prevent exceeding the air threshold-value (AGW; TLV, TRGS900, Occupational Exposure Limit) and in order to prevent a possible overexposure to DMF vapours.

For pregnant women in work areas with DMF exposure, an endangerment of the foetus in the air threshold-range is also not to be ruled out (pregnancy group B). Therefore, it is to be ensured that pregnant women are not exposed to DMF.

For all other groups of people with a DMF exposure, health is generally not impaired when the air threshold-value of 10 ppm is complied with.

Personal measurements of DMF concentrations in breathable air (8-h mean value) with adequate air-extraction and ventilation are to result in the following concentrations during the further processing of Dralon X:

Ring and OE spinning mill < 0.1 ppm

The residual DMF content remaining in the fibres or finished article after a hot/wet treatment has been carried out at ≥ 90 °C (e.g. in a dye works) lies considerably under 0.1 %.

Based on results from migration and evaporation experiments carried out using these finished articles, an endangerment of the consumer due to residual DMF cannot be seen at this time.

In cases in which the yarn or the article was previously neither dyed nor washed, we therefore recommend carrying out a hot/wet treatment (≥ 90 °C).

The information in this data sheet for chemical fibres refers exclusively to the products described herein and not to use in combination with any other material or another preparation or another article or any other process. The data sheet is meant to protect people and the environment through providing appropriate information to the commercial user of chemical fibres. It is not intended for the private end consumer.

This data sheet replaces all previous versions.

Revised and valid starting: see date of issue

The information is based on the current state of knowledge and experience.

The data sheet describes products in terms of the safety requirements. The information does not have the intention of being assurances of characteristics.