



K0003 [2]
Europe / Africa
July 2006

Kraton® D-1101 polymer

Data Document

Description

Kraton® D-1101 polymer is a clear linear block copolymer based on styrene and butadiene, with bound styrene of 31% mass. It is supplied from Europe in five physical forms, identified as follows in the grade nomenclature:

- D-1101CS/ES supplied as dusted porous pellets
- D-1101CU supplied as undusted porous pellets
- D-1101CM/EM supplied as dusted powder
- D-1101CMU supplied as undusted powder
- D-1101AF supplied as dusted 'fluffy' crumb

Kraton D-1101 polymer is used as a modifier of bitumen in roofing felt coating compounds, roads and pipe coating. It may also be suitable for use in formulating adhesives, sealants and coatings and in the modification of polymers.

The absence of a dusting agent in Kraton D-1101CMU polymer results in a powder which shows a strong tendency to re-agglomerate on storage. This grade is recommended as a modifier of bitumen emulsions where the presence of a high amount of dusting agent may be prejudicial.

Sales Specifications

Property	Test Method	Units	Sales Specification Range
Bound styrene	KM03	%mass	30 - 32
Volatile matter	KMd04	%mass	0.5 max (F)
Volatile matter	KMd04	%mass	0.3 max (A, E, S, U, M, MU)
Ash	ISO 247-B	%m/m	0.2 max (U, MU)
Ash	ISO 247-B	%m/m	0.4 max (S)
Total extractables	KM05	%mass	1.0 max.
Solution viscosity	KM06	Pa.s	3.0 - 5.0
Antioxidant content	KM08	%mass	0.14% min.

Typical Properties (These are typical values and may not routinely be measured on finished product)

Property	Test Method	Units	Typical Value
Melt flow rate 200°C/5kg	ISO 1133	g/10 min	<1
Specific gravity	ISO 2781		0.94
Bulk density	ASTM D1895 method B	Mg/m ³	0.4 (S, U, MU, M)
Bulk density	ASTM D1895	Mg/m ³	0.3 (F)
Hardness	ISO 868	Shore A (30s)	72
Tensile strength	ISO 37	MPa	33
Elongation at break	ISO 37	%	880
300% modulus	ISO 37	MPa	2.9

Packaging

Kraton Polymers' products are available in a number of different pack types. For information specific to this grade please contact your local Kraton Polymers representative.

End Use Requirements

If the finished article is intended for use in food contact and packaging applications, toys, or human contact areas, manufacturers of the final product should observe all relevant regulations. Some of these regulations require tests to be carried out on the final product, e.g. migration. These are the responsibility of the final product manufacturer..

Information on the food packaging clearances of individual products is available from Kraton Polymers.

Medical, Healthcare and Cosmetic Applications and Trademark Usage

Products or compounds made from Kraton Polymers products shall not be used in any of the following applications: (a) cosmetics, (b) drugs and other pharmaceuticals, and (c) Class II and Class III Medical Devices, as defined in 21 CFR 860.3 (hereinafter collectively referred to as "Medical/Healthcare Applications"). Kraton Polymers requires that it give its prior written approval before its products are used in such Medical/Healthcare Applications.

Please contact your Kraton Polymers Sales Representative for more details before using our products in these specific applications.

Kraton POLYMERS HAS NO SPECIFIC EXPERTISE IN THE MEDICAL/HEALTHCARE MARKET OR MEDICAL/HEALTHCARE APPLICATIONS AND DOES NOT INTEND TO PERFORM TESTING CLINICAL STUDIES OR OTHER INVESTIGATIONS OF THE SUITABILITY OF ITS PRODUCTS FOR THESE SPECIFIC APPLICATIONS. Kraton POLYMERS MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE (INCLUDING MEDICAL/HEALTHCARE APPLICATIONS) FOR ITS PRODUCTS.

EACH CUSTOMER OR USER OF Kraton POLYMERS PRODUCTS IS SOLELY RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE MATERIALS IT SELECTS FOR THE INTENDED PURPOSE FOR MEDICAL/HEALTHCARE APPLICATIONS, EACH CUSTOMER OR USER MUST CONDUCT ITS OWN STUDIES

REGISTRATIONS, AND OTHER RELATED ACTIVITIES TO ESTABLISH THE SAFETY AND EFFICACY OF ITS PRODUCTS.

Do not use Kraton Polymers tradenames, trademarks logos or other similar identifying characteristics for the manufacture, sale or promotion of products intended for Medical/Healthcare Applications.

Safety and Handling Precautions

Read the Material Safety Data Sheet for Kraton Polymers' products carefully and thoroughly before beginning any work with such products. Additional information relating to the health, safety, storage, handling and processing of Kraton Polymers' products can be found in the Kraton Polymer HSE Fact Sheet (K0155), available from your local Kraton Polymers Sales Representative. Kraton Polymers also recommends that customers or users consult other sources of safety information, for example, the current edition of the "Code of Practice on the Toxicity and Safe Handling of Rubber Chemicals," British Rubber Manufacturers Association Limited (www.brma.co.uk).

Kraton Polymers products' and compounds can accumulate electrostatic charges when rubbed, chafed or abraded. Processing and storage equipment for use with Kraton Polymers' products should provide a means of dissipating any charges that may develop.

When processing Kraton Polymers' products, maintain a fire watch if the material reaches 225°C (437°F) for Kraton IR and Kraton D (polymers and compounds), and 280°C (536°F) for Kraton G (polymers and compounds). The temperatures listed above are indicated only for safety reasons (risk of fire and product degradation) and are not necessarily recommended for processing. Degradation of the polymer (polymer breakdown) will start at lower temperatures depending on the specific processing conditions. Therefore, operating below these temperatures does not guarantee the absence of product degradation.

Kraton Polymers' products (the neat resin or the base product) are high molecular weight polymers which by all accounts are non-toxic and biologically inactive.

Warranty

The information contained in this publication is, to the best of Kraton Polymers' knowledge, true and accurate, but any recommendations or suggestions that may be made are without guarantee or warranty of any kind whatsoever, since the manufacturing conditions to which Kraton Polymers' products will be subject are beyond Kraton Polymers' control. Customers of Kraton Polymers must make their own assessment to determine the suitability of a Kraton Polymers product for a particular purpose. Further, nothing contained herein shall be construed as a recommendation to use any Kraton Polymers product in conflict with existing patents of Kraton Polymers or any third party. All products purchased from or supplied by Kraton Polymers are subject to the terms and conditions of sale set out in the applicable contract, order acknowledgement and/or bill of lading. Kraton Polymers warrants only that its products will meet the specifications designated in any such contract, order acknowledgement or bill of lading.

Kraton POLYMERS MAKES NO OTHER WARRANTIES REGARDING ITS PRODUCTS, WHETHER OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR OTHERWISE, AND NONE SHALL BE IMPLIED. FURTHER, Kraton POLYMERS MAKES NO REPRESENTATIONS AND ASSUMES NO RESPONSIBILITY WHATSOEVER WITH RESPECT TO FREEDOM FROM INFRINGEMENT OF ANY PATENT AND/OR COPYRIGHT RESULTING FROM ITS CUSTOMERS' USE OF Kraton POLYMERS' PRODUCTS OR INFORMATION.

For further information:

USA Tel (toll free): +1-800-4-Kraton (+1 800-457-2866)

USA Tel: +1-281-504-4950

USA Fax: +1-281-504-4953

In Europe / Africa

Europe Fax: +44-(0)1829-773-130

In South America

Fax: +55-(0)19-3874-7275

In Asia Pacific

Tel Japan +81-3-3769-5990

Hong Kong +852-250-80-657

Taiwan +886-2-2545-1538

China +86-21-5109-5212

South East Asia / India +91-11-628-4324

Australia +61-41-937-5055

Or contact your local Kraton Polymers Representative

Visit us at www.kraton.com**Email info@kraton.com**K0003 [2]
D-1101 polymer