Kraton® D SIS

The Kraton D SIS family of polymers are high performance thermoplastic elastomers with a combination of high strength, low hardness and low viscosity for easy thermoplastic processing as a melt or in solution. SIS polymers are based on styrene and isoprene and are the lowest hardness and lowest viscosity of all the styrenic block copolymers. They are ideally suited for formulating pressure sensitive adhesives (packaging tape, labels, etc.), hot melt spray diaper adhesives, elastic films, and many other innovative applications.

Kraton D (SIS) Selector

Use the dropdown to select your region and click on the arrows to sort the data. Download the Adobe Acrobat Reader. To browse a wider range of Kraton products, visit the Product Selector

Grade	Structure	% Styrene	Hardness	% Diblock	% Oil	Solution Viscosity	Melt Flow	Data Doc	MSDS
D-1107CP	SIS	15	37	15	0	1.6	10		
D-1111K	SIS	22	45	18	0	1.1	3		
D-1113P	SIS	16	23	55	0	0.6	24		
D-1117P	SIS	17	33	33	0	0.5	33		
D-1119P	SIS	22	30	66	0	0.34	25		
D-1124P	(SI)n	30	54	30	0	0.34	4		
D-1160BT	SIS	19	48	-	0	0.9	9		
D-1161JP	SIS	15	32	19	0	1.2	13		
D-1163P	SIS	15	25	38	0	0.9	23		
D-1164P	SIS	29	53	-	0	0.3	12		
D-1165NS	SIS	30	61	20	0	0.34	8		
D-4433P	SIS oiled	22	29	18	23	0.35	29		

Properties Legend

Property	Units
%Styrene	wt%
Hardness	Shore A
%Diblock	wt%
%Oil	wt%
Solution Viscosity	Pa.s @ 25% in Toluene @ 25C
Melt Flow	grams/10 min @ 200C, 5 kg

K0439 Asia Pacific Mar 2006	Kraton® D-1107C	Data Document

Description

Kraton® D-1107C Polymer is a clear linear block copolymer based on styrene and isoprene with bound styrene of 15% mass. It is supplied from Japan in the physical forms described below.

- D-1107CP supplied as a dusted dense pellet
- D-1107CS supplied as dusted crumb
- D-1107CU supplied as non-dusted crumb

Kraton D-1107C Polymer is used in formulating adhesives, sealants and coatings. It is also used as a modifier of bitumen and polymers and in formulating compounds.

Packaging

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

Kraton Polymers products should not be used in any devices or materials intended for implantation in the human body as defined by the U.S. Food and Drug Administration under 21 CFR 812.3(d) and 21 CFR 860.3(d).
Kraton Polymers products may, in certain circumstances, be used in the following products or applications with prior written approval for each specific product or application:
(a) Cosmetics (exclusive of packaging or delivery applications).
(b) Drugs and other Pharmaceuticals (exclusive of packaging or delivery applications).
Kraton Polymers trade names, trademarks, logos or other similar identifying characteristics should not be used in the manufature, sale, or promotion of cosmetics, drugs, and pharmaceutical products or other medical/healthcare applications or materials.
Kraton Polymers has no specific expertise in these markets and applications, and does not intend to perform testing, clinical studies or other investigations of the suitability of its products for specific applications.
Each customer or user of Kraton Polymers products is solely responsible for determining the suitability of the materials it selets for the intended purpose and acknowledges that it has not relied on any representations of Kraton Polymers regarding suitability for use in its intended cosmetics, drugs, pharmaceutical products or materials.
Please contact your Kraton Polymers Sales Representative for more details before using our products in these specific applications.

Safety and Handling Precautions

Read the Safety Data Sheet carefully and thoroughly before beginning any work. Additional information relating to the health, safety, storage, handling and processing of Kraton Polymers products can be found in "Health and Safety Aspects of Kraton D and Kraton G Polymers" (Document K0155), available from your local Sales Representative or the company website. 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.
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 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.

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D-1107C

K0233 North America 1/12/2007	KRATON® D1111K	Data Document

Identifier : K233DDg05U

Description

Kraton D1111K is a clear, linear triblock copolymer based on styrene and isoprene with a polystyrene content of 31%. It is supplied from North America in the physical form identified below.

- Kraton D1111K -16 supplied as a dusted porous pellet.

KRATON D1111K is used as an ingredient in formulating adhesives, sealants and coatings. It may also find use as a modifier of bitumen or thermoplastics and in compound formulations. This product is also available as an undusted porous pellet (-00).

Sales Specifications

Property	Test Method	Units	Sales Specification Range	Notes
Polystyrene Content	BAM 919	%w	20 TO 24	
Volatile Matter	BAM 907	%w	<= 0.7	
Dust, Fine Talc	BAM 908	%w	0.25 TO 0.45	
Total Extractables	BAM 905	%w	<= 1	
Vis, Sol (Toluene) 25.0%w @25C	BAM 922	cP	750 TO 1250	
Antioxidant	BAM 929	%w	0.08 TO 0.21	a

a Primary antioxidant is a non-staining phenolic antioxidant. The antioxidant package also contains a non-TNPP secondary antioxidant at a target level of 0.2% wt.

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

Property	Test Method	Units	Typical Value	Notes
Tensile strength	ASTM D-412	psi	2900	c
Melt Index 200°C, 5kg	n/a	g/10 Min.	2	
Solution Viscosity	BAM 922	cps	1000	d
Styrene / Rubber ratio	n/a		22/78	
300% Modulus	ASTM D-412	psi	200	c
Hardness	ASTM 2240	Shore A (10s)	45	b
Diblock content	n/a		18	
Specific gravity	ASTM D4025	gm/cc	0.93	
Elongation at break	ASTM D-412	%	1200	c

b Typical values on polymer compression molded at 300F.

c Measured on films cast from a solution in toluene.

d 25%w toluene solution at 25C

Packaging

Kraton Polymers are available in a number of different package 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 applications, toys, or human contact areas, manufacturers of the final product should observe all relevant regulations. Detailed information is available from Kraton Polymers.
For food packaging, manufacturers of the final product should ensure that all ingredients used comply with applicable 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.

Restrictions on Medical/Healthcare Applications

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, since the conditions of use and storage are beyond Kraton Polymers' control. The customer understands that it shall make its 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. All products purchased from or supplied by Kraton Polymers are subject to terms and conditions set out in the applicable contract, order acknowledgement and/or bill of lading. Kraton Polymers warrants only that its products will meet those specifications designated therein.
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K0132 North America 1/26/2007	KRATON® D1113P	Data Document

Identifier : K132DDd05U

Description

Kraton D1113P is a clear, linear triblock copolymer based on styrene and isoprene with a polystyrene content of 31%. It is supplied from North America in the physical form identified below.

- KRATON D1113P -17 supplied as a dusted dense pellet.

Kraton D1113P is used as an ingredient in formulating adhesives, sealants and coatings. It may also find use as a modifier of bitumen or thermoplastics and in compound formulations.

Sales Specifications

Property	Test Method	Units	Sales Specification Range	Notes
Polystyrene Content	BAM 919	%w	15.1 TO 17.3	
Volatile Matter	BAM 907	%w	<= 0.5	
Dust, Talc	BAM 908	%w	0.3 TO 0.4	
Vis, Sol (Toluene) 25.0%w @25C	BAM 922	cP	470 TO 890	
Antioxidant content	BAM 929	%w	0.08 TO 0.20	a

a Primary antioxidant is a non-staining, phenolic antioxidant. The antioxidant package also contains a non-TNPP secondary antioxidant at a target level of 0.2% wt.

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

Property	Test Method	Units	Typical Value	Notes
Melt Index 200°C, 5kg	n/a	g/10 Min.	24	
Tensile strength	ASTM D-412	psi	600	c
Hardness	ASTM 2240	Shore A (10s)	23	b
300% Modulus	ASTM D-412	psi	50	c
Diblock content	n/a		56	
Specific gravity	ASTM D4025	gm/cc	0.92	
Styrene / Rubber ratio	n/a		16/84	
Elongation at break	ASTM D-412	%	1500	c

b Typical values on polymer compression molded at 300F.

c Typical properties determined on film cast from toluene solution.

Packaging

Kraton Polymers are available in a number of different package 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 applications, toys, or human contact areas, manufacturers of the final product should observe all relevant regulations. Detailed information is available from Kraton Polymers.
For food packaging, manufacturers of the final product should ensure that all ingredients used comply with applicable 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.

Restrictions on Medical/Healthcare Applications

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.
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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).
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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

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K0098 North America 5/14/2007	KRATON® D1117P Polymer	Data Document

Identifier : K098DDe07U

Description

Kraton D1117P is a clear, linear triblock copolymer based on styrene and isoprene with a polystyrene content of 17%. It is supplied from North America in the physical form identified below.

- Kraton D1117P -17 supplied as a dusted, dense pellet

Kraton D1117P is used as an ingredient in formulating adhesives, sealants and coatings. It may also find use as a modifier of bitumen or thermoplastics and in compound formulations.

Sales Specifications

Property	Test Method	Units	Sales Specification Range	Notes
Polystyrene Content	BAM 919	%w	15.6 TO 19.2	
Volatile Matter	BAM 907	%w	<= 0.5	
Total Extractables	BAM 905	%w	<= 1	
Dust, Talc	BAM 908	%w	0.30 TO 0.40	
Vis, Sol (Toluene) 25.0%w @25C	BAM 922	cP	350 TO 590	
Antioxidant	BAM 929	%w	0.08 TO 0.20	a

a Primary antioxidant is a non-staining phenolic antioxidant. The antioxidant package also contains a non-TNPP secondary antioxidant at a target level of 0.2% wt.

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

Property	Test Method	Units	Typical Value	Notes
Melt Index 200°C, 5kg	n/a	g/10 Min.	33	
Hardness	ASTM 2240	Shore A (10s)	33	b
Elongation at break	ASTM D-412	%	1300	c
Specific gravity	ASTM D4025	gm/cc	0.92	
300% Modulus	ASTM D-412	psi	60	c
Styrene / Rubber ratio	n/a		17/83	
Tensile strength	ASTM D-412	psi	1200	c
Diblock content	n/a		33	

b Typical values on polymer compression molded at 300F.

c Typical properties determined on film cast from toluene solution.

Packaging

Kraton Polymers are available in a number of different package 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 applications, toys, or human contact areas, manufacturers of the final product should observe all relevant regulations. Detailed information is available from Kraton Polymers.
For food packaging, manufacturers of the final product should ensure that all ingredients used comply with applicable 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.

Restrictions on Medical/Healthcare Applications

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.
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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).
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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

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K0080 North America 1/11/2007	KRATON® D1119P	Data Document

Identifier : K080DDg07U

Description

Kraton D1119P is a clear, linear triblock copolymer based on styrene and isoprene with a polystyrene content of 22%. It is supplied from North America in the physical form identified below.

- KRATON D1119P -17 supplied as a dusted dense pellet.

Kraton D1119P is used as an ingredient in formulating adhesives, sealants and coatings. It may also find use as a modifier of bitumen or thermoplastics and in compound formulations.

Sales Specifications

Property	Test Method	Units	Sales Specification Range	Notes
Polystyrene Content	BAM 919	%w	20.5 TO 23.5	
Volatile Matter	BAM 907	%w	<= 0.5	
Dust, Talc	BAM 908	%w	0.30 TO 0.40	
Total Extractables	BAM 905	%w	<= 1	
Antioxidant	BAM 929	%w	0.10 TO 0.20	a

a Primary antioxidant is a non-staining phenolic antioxidant. The antioxidant package also contains a non-TNPP secondary antioxidant at a target level of 0.2% wt.

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

Property	Test Method	Units	Typical Value	Notes
Styrene / Rubber ratio	n/a		22/78	
Diblock content	n/a		66	
Melt Index 200°C, 5kg	n/a	gms/10 Min.	25	
Specific gravity	ASTM D4025	gm/cc	0.93	
Hardness	ASTM 2240	Shore A (10s)	30	
Elongation at break	ASTM D-412	%	1000	
300% Modulus	ASTM D-412	psi	160	
Tensile strength	ASTM D-412	psi	350	

Packaging

Kraton Polymers are available in a number of different package 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 applications, toys, or human contact areas, manufacturers of the final product should observe all relevant regulations. Detailed information is available from Kraton Polymers.
For food packaging, manufacturers of the final product should ensure that all ingredients used comply with applicable 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.

Restrictions on Medical/Healthcare Applications

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, since the conditions of use and storage are beyond Kraton Polymers' control. The customer understands that it shall make its 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. All products purchased from or supplied by Kraton Polymers are subject to terms and conditions set out in the applicable contract, order acknowledgement and/or bill of lading. Kraton Polymers warrants only that its products will meet those specifications designated therein.
KRATON POLYMERS MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE; OR THAT THE USE OF SUCH INFORMATION OR KRATON POLYMERS PRODUCT WILL NOT INFRINGE ANY PATENT.

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K0171 North America July 2005	Kraton® D1124P Polymer	Data Document

Description

Kraton® D1124P is a clear, branched copolymer based on styrene and isoprene with a polystyrene content of 30%. It is supplied from North America in the physical form identified below.

- D1124P-17 supplied as a dusted dense pellet

Kraton D1124P is used as an ingredient in formulating adhesives, sealants and coatings. It may also find use as a modifier of bitumen or thermoplastics and in compound formulations.

Sales Specifications

Property	Test Method	Units	Sales Specification Range
Polystyrene content	BAM 919	%w	28.4 - 31.6
Volatile matter	BAM 907	%w	0.5 max.
Dust content [a]	BAM 908	%w	0.15 - 0.35
Total extractables	BAM 905	%w	1.2 max.
Solution viscosity [b]	BAM 922	cps	280 - 400
Primary Antioxidant Content [c]	BAM 929	%w	0.08 - 0.21

[a] Talc

[b] 25%w toluene solution at 25°C

[c] Primary antioxidant is a non-staining, phenolic antioxidant. The antioxidant package also contains a non-TNPP secondary antioxidant at a target level of 0.2% wt.

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

Property	Test Method	Units	Typical Value
Styrene / Rubber ratio		%	30/70
Diblock content		%	29
Melt Flow Index 200°C/5.0 kg		gm/10 min.	4
Specific gravity		gm/cc	0.94
Hardness [d]		Shore A (10s)	54
Tensile strength [e] [f]		psi	2,100
Elongation [e] [f]		%	1,100
300% modulus [e] [f]		psi	430

[d] Typical values on polymer compression molded at 300°F

[e] Measured on films cast from a solution in toluene

[f] ASTM D-412

Packaging

Kraton Polymers are available in a number of different package 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

Kraton Polymers products should not be used in any devices or materials intended for implantation in the human body as defined by the U.S. Food and Drug Administration under 21 CFR 812.3(d) and 21 CFR 860.3(d).
Kraton Polymers products may, in certain circumstances, be used in the following products or applications with prior written approval for each specific product or application:
(a) Cosmetics (exclusive of packaging or delivery applications).
(b) Drugs and other Pharmaceuticals (exclusive of packaging or delivery applications).
Kraton Polymers trade names, trademarks, logos or other similar identifying characteristics should not be used in the manufature, sale, or promotion of cosmetics, drugs, and pharmaceutical products or other medical/healthcare applications or materials.
Kraton Polymers has no specific expertise in these markets and applications, and does not intend to perform testing, clinical studies or other investigations of the suitability of its products for specific applications.
Each customer or user of Kraton Polymers products is solely responsible for determining the suitability of the materials it selets for the intended purpose and acknowledges that it has not relied on any representations of Kraton Polymers regarding suitability for use in its intended cosmetics, drugs, pharmaceutical products or materials.
Please contact your Kraton Polymers Sales Representative for more details before using our products in these specific applications.

Safety and Handling Precautions

Read the Safety Data Sheet carefully and thoroughly before beginning any work. Additional information relating to the health, safety, storage, handling and processing of Kraton Polymers products can be found in "Health and Safety Aspects of Kraton D and Kraton G Polymers" (Document K0155), available from your local Sales Representative or the company website. 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.
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 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.
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		Email info@kraton.com	

K0171 DDe-05U
D1124P Polymer
07/22/2005

K0024 South America June 2003	Kraton® D-1160BT polymer	Data Document

Description

Kraton® D-1160BT polymer is a clear linear triblock copolymer based on styrene and isoprene with bound styrene of 18.5% mass.

It is supplied from Brazil as porous pellets dusted with a talc.

Kraton D-1160BT Polymer is used in formulating adhesives, in particular hot melt pressure sensitive adhesives.

Sales Specifications

Property	Test Method	Units	Sales Specification Range
Bound styrene	KM03	%mass	17.4 - 20.5
Molecular weight	KM01	kg/mol	168 - 188
Volatile matter	KM04	%mass	0.3 max.
Ash	ISO 247-B	%mass	0.5 max.
Total extractables	KM05	%mass	1.0 max.
Solution viscosity [a]	KM06	Pa.s	0.7 - 1.1
Antioxidant content	KM08	%mass	0.08 min.

[a] Measured on 25% mass solution in toluene at 25°C using a Brookfield viscometer, LTF or LTV model

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	9
Specific gravity	ISO 2781		0.92
Bulk density	ASTM D1895 method B	Mg/m^3	0.35
Hardness [b]	ISO 868	Shore A (30s)	48
Tensile strength [c]	ISO 37	MPa	32
Elongation at break [c]	ISO 37	%	1300
300% modulus [c]	ISO 37	MPa	1.9

[b] Measured on compression molded slabs

[c] Measured on films cast from a solution in toluene

Packaging

Kraton Polymers 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

Kraton Polymers products should not be used in any devices or materials intended for implantation in the human body as defined by the U.S. Food and Drug Administration under 21 CFR 812.3(d) and 21 CFR 860.3(d).
Kraton Polymers products may, in certain circumstances, be used in the following products or applications with prior written approval for each specific product or application:
(a) Cosmetics (exclusive of packaging or delivery applications).
(b) Drugs and other Pharmaceuticals (exclusive of packaging or delivery applications).
Kraton Polymers trade names, trademarks, logos or other similar identifying characteristics should not be used in the manufature, sale, or promotion of cosmetics, drugs, and pharmaceutical products or other medical/healthcare applications or materials.
Kraton Polymers has no specific expertise in these markets and applications, and does not intend to perform testing, clinical studies or other investigations of the suitability of its products for specific applications.
Each customer or user of Kraton Polymers products is solely responsible for determining the suitability of the materials it selets for the intended purpose and acknowledges that it has not relied on any representations of Kraton Polymers regarding suitability for use in its intended cosmetics, drugs, pharmaceutical products or materials.
Please contact your Kraton Polymers Sales Representative for more details before using our products in these specific applications.

Safety and Handling Precautions

Read the Safety Data Sheet carefully and thoroughly before beginning any work. Additional information relating to the health, safety, storage, handling and processing of Kraton Polymers products can be found in "Health and Safety Aspects of Kraton D and Kraton G Polymers" (Document K0155), available from your local Sales Representative or the company website. 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.
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 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.
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K0024 DDa-03E
D-1160BT polymer

K0437 Asia Pacific Mar 2006	Kraton® D-1161JP Polymer	Data Document

Description

Kraton® D-1161JP is a clear linear block copolymer based on styrene and isoprene with bound styrene of 15% mass. It is supplied from Japan in the following product form.

- D-1161JP supplied as dusted dense pellets

Kraton D-1161JP is used in formulating adhesives, sealants and coatings. It is also used as a modifier of bitumen and polymers and in formulating compounds.

Sales Specifications

Property	Test Method	Units	Sales Specification Range
Melt Flow Rate, 200°C, 5kg	ISO 1133	g/10 min	1.3 - 3.7
Bound styrene	KM03	%mass	13.0 - 17.0
Volatile matter	KM04	%mass	0.5 max.
Ash	ISO 247-B	%mass	0.5 max.
Solution viscosity [a]	KM06	Pa.s	0.9 - 1.7

[a] 25%w toluene solution at 25°C

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

Property	Test Method	Units	Typical Value
Hardness Shore A, 30 s			37
Bound styrene		%mass	15
Solution viscosity [a]		Pa.s	1.2
Specific gravity			0.92
Tensile strength		MPa	28
Elongation at break		%	1,300
300% modulus		MPa	0.9

[a] 25%w toluene solution at 25°C

Packaging

Kraton D-1161JP is available in paper bags weighing 25 kg.

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

Kraton Polymers products should not be used in any devices or materials intended for implantation in the human body as defined by the U.S. Food and Drug Administration under 21 CFR 812.3(d) and 21 CFR 860.3(d).
Kraton Polymers products may, in certain circumstances, be used in the following products or applications with prior written approval for each specific product or application:
(a) Cosmetics (exclusive of packaging or delivery applications).
(b) Drugs and other Pharmaceuticals (exclusive of packaging or delivery applications).
Kraton Polymers trade names, trademarks, logos or other similar identifying characteristics should not be used in the manufature, sale, or promotion of cosmetics, drugs, and pharmaceutical products or other medical/healthcare applications or materials.
Kraton Polymers has no specific expertise in these markets and applications, and does not intend to perform testing, clinical studies or other investigations of the suitability of its products for specific applications.
Each customer or user of Kraton Polymers products is solely responsible for determining the suitability of the materials it selets for the intended purpose and acknowledges that it has not relied on any representations of Kraton Polymers regarding suitability for use in its intended cosmetics, drugs, pharmaceutical products or materials.
Please contact your Kraton Polymers Sales Representative for more details before using our products in these specific applications.

Safety and Handling Precautions

Read the Safety Data Sheet carefully and thoroughly before beginning any work. Additional information relating to the health, safety, storage, handling and processing of Kraton Polymers products can be found in "Health and Safety Aspects of Kraton D and Kraton G Polymers" (Document K0155), available from your local Sales Representative or the company website. 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.
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 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.
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In South America		Australia	+61-41-937-5055
Fax:	+55-(0)19-3874-7275	Or contact your local Kraton Polymers Representative	
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K0437 DDa-06J D1161JP
D-1161JP Polymer
3/29/2006

K0300 North America 1/24/2007	KRATON® D1163P	Data Document

Identifier : K300DDb07U

Description

Kraton D1163P is a clear, linear triblock copolymer based on styrene and isoprene, with a polystyrene content of 15%. It is supplied from North America in the physical form identified below.

- KRATON D1163P -17 supplied as a dusted dense pellet.

Kraton D1163P is used as an ingredient in formulating adhesives, sealants and coatings. It may also find use as a modifier of bitumen and polymers.

Sales Specifications

Property	Test Method	Units	Sales Specification Range	Notes
Polystyrene Content	BAM 919	%w	13.3 TO 16.3	
Volatile Matter	BAM 907	%w	<= 0.5	
Total Extractables	BAM 905	%w	<= 1	
Antioxidant	BAM 929	%w	0.08 TO 0.20	a
Dust, Fine Talc	BAM 908	%w	0.25 TO 0.45	

a Primary antioxidant is a non-staining, phenolic antioxidant. The antioxidant package also contains a non-TNPP secondary antioxidant at a target level of 0.2% wt.

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

Property	Test Method	Units	Typical Value	Notes
Hardness	ASTM 2240	Shore A (10s)	25	
Specific gravity	ASTM D4025	gm/cc	0.92	
Melt Index 200°C, 5kg	n/a	gms/10 Min.	23	
Diblock content	n/a		38	
Tensile strength	ASTM D-412	psi	1500	
Elongation at break	ASTM D-412	%	1400	
300% Modulus	ASTM D-412	psi	70	
Styrene / Rubber ratio	n/a		15/85	
Solution Viscosity	BAM 922	cps	900	

Packaging

End Use Requirements

If the finished article is intended for use in food contact applications, toys, or human contact areas, manufacturers of the final product should observe all relevant regulations. Detailed information is available from Kraton Polymers.
For food packaging, manufacturers of the final product should ensure that all ingredients used comply with applicable 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.

Restrictions on Medical/Healthcare Applications

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, since the conditions of use and storage are beyond Kraton Polymers' control. The customer understands that it shall make its 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. All products purchased from or supplied by Kraton Polymers are subject to terms and conditions set out in the applicable contract, order acknowledgement and/or bill of lading. Kraton Polymers warrants only that its products will meet those specifications designated therein.
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K0377 North America February 2005	Kraton® D1164P Polymer	Data Document

Description

Kraton® D1164P is a clear, linear triblock copolymer based on styrene and isoprene with a polystyrene content of 29%. It is supplied from North America in the physical form identified below.

- D1164P supplied as a dusted dense pellet

Kraton D1164P is used in comound formulations and as a modifier of thermoplastics. It may also find use in formulating adhesives, sealants, coatings and modified bitumens.

Sales Specifications

Property	Test Method	Units	Sales Specification Range
Polystyrene content	BAM 919	%w	28.5 - 31.5
Volatile matter	BAM 907	%w	0.5 max.
Dust content [a]	BAM 908	%w	0.15 - 0.40
Total extractables	BAM 905	%w	1.0 max.
Solution viscosity [b]	BAM 922	cps	200 - 400
Antioxidant content [c]	BAM 929	%w	0.08 - 0.21
Melt Flow, 200°C, 5 kg	BAM 903	gm/10 min	8 - 15

[a] Talc

[b] 25%w toluene solution at 25°C

[c] Primary antioxidant is a non-staining, phenolic antioxidant. The antioxidant package also contains a non-TNPP secondary antioxidant at a target level of 0.2% wt.

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

Property	Test Method	Units	Typical Value
Styrene / Rubber ratio		%	29/71
Hardness [d]		Shore A (10s)	53
Tensile strength [e] [f]		psi	4,000 min.
Elongation [e]		%	1,000 min.
300% modulus [e]		psi	445

[d] Typical values on polymer compression molded at 300°F

[e] ASTM D-412

[f] Typical properties determined on film cast from toluene solution

Packaging

Kraton Polymers are available in a number of different package 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

Kraton Polymers products should not be used in any devices or materials intended for implantation in the human body as defined by the U.S. Food and Drug Administration under 21 CFR 812.3(d) and 21 CFR 860.3(d).
Kraton Polymers products may, in certain circumstances, be used in the following products or applications with prior written approval for each specific product or application:
(a) Cosmetics (exclusive of packaging or delivery applications).
(b) Drugs and other Pharmaceuticals (exclusive of packaging or delivery applications).
Kraton Polymers trade names, trademarks, logos or other similar identifying characteristics should not be used in the manufature, sale, or promotion of cosmetics, drugs, and pharmaceutical products or other medical/healthcare applications or materials.
Kraton Polymers has no specific expertise in these markets and applications, and does not intend to perform testing, clinical studies or other investigations of the suitability of its products for specific applications.
Each customer or user of Kraton Polymers products is solely responsible for determining the suitability of the materials it selets for the intended purpose and acknowledges that it has not relied on any representations of Kraton Polymers regarding suitability for use in its intended cosmetics, drugs, pharmaceutical products or materials.
Please contact your Kraton Polymers Sales Representative for more details before using our products in these specific applications.

Safety and Handling Precautions

Read the Safety Data Sheet carefully and thoroughly before beginning any work. Additional information relating to the health, safety, storage, handling and processing of Kraton Polymers products can be found in "Health and Safety Aspects of Kraton D and Kraton G Polymers" (Document K0155), available from your local Sales Representative or the company website. 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.
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.
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Kraton Polymers products (the neat resin or the base product) are high molecular weight polymers which 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.
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K0377 DDb-05U
D1164P Polymer
09/29/2004

K0411 Europe/Africa July 2005	Kraton® D-1165NS	Data Document

Description

Kraton® D-1165NS is a clear linear block copolymer based on styrene and isoprene with bound styrene of 30% mass.

Kraton D-1165NS is supplied from the Netherlands as porous pellets dusted with an amorphous silica.

Kraton D-1165NS polymer is mostly used in formulating adhesives, hot melt sprayable adhesives in particular.

Sales Specifications

Property	Test Method	Units	Sales Specification Range
Bound styrene	KM03	%mass	28.2 - 31.8
Molecular weight	KM01	kg/mol	130 - 152
Volatile matter	KM04	%mass	0.4 max.
Ash	ISO 247-B	%m/m	0.1 - 0.4
Antioxidant content [a]	KM08	%mass	0.06 min.

[a] Primary phenolic antioxidant

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

Property	Test Method	Units	Typical Value
Solution viscosity [b]	KM06	Pa.s	0.3
Melt flow rate 200°C/5kg	ISO 1133	g/10 min	8
Specific gravity	ISO 2781	Mg/m³	0.92
Bulk density	ASTM D1895 method B	Mg/m³	0.35
Hardness [c]	ISO 868	Shore A (30s)	61
Tensile strength [d]	ISO 37	MPa	21
Elongation at break [d]	ISO 37	%	1200
300% modulus [d]	ISO 37	MPa	2.7

[b] Measured on 25% mass solution in toluene at 25°C using a Brookfield viscometer, LTF or LTV model

[c] Measured on compression molded slabs

[d] Measured on films cast from a solution in toluene

Packaging

Kraton Polymers 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

Kraton Polymers products should not be used in any devices or materials intended for implantation in the human body as defined by the U.S. Food and Drug Administration under 21 CFR 812.3(d) and 21 CFR 860.3(d).
Kraton Polymers products may, in certain circumstances, be used in the following products or applications with prior written approval for each specific product or application:
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Please contact your Kraton Polymers Sales Representative for more details before using our products in these specific applications.

Safety and Handling Precautions

Read the Safety Data Sheet carefully and thoroughly before beginning any work. Additional information relating to the health, safety, storage, handling and processing of Kraton Polymers products can be found in "Health and Safety Aspects of Kraton D and Kraton G Polymers" (Document K0155), available from your local Sales Representative or the company website. 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.
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Kraton Polymers products (the neat resin or the base product) are high molecular weight polymers which are non-toxic and biologically inactive.

Warranty

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D-1165NS

KRATON™ Polymers

K0176
North America
Issued Apr. 2001

KRATON™ D4433P Polymer

Data Document

Description

KRATON™ D4433P is a clear, linear triblock copolymer based on styrene and isoprene, with a polystyrene content of 22%. It is supplied from North America in the physical form identified below. The product code is N7525 and the Material Safety Data Sheet number is 2900.

- D4433P-16 supplied as a dusted dense pellet.

KRATON D4433P is used as a modifier of bitumen and polymers. It is also suitable as an ingredient in formulating compounds for footwear applications and may be used in formulating adhesives, sealants and coatings.

Sales Specifications

Property	Test Method	Units	Sales Specification Range
Polystyrene Content	BAM 919	%w	20.0 - 24.0
Volatile Matter	BAM 907	%w	≤ 0.7
Oil	BAM 905	%w	21.5 - 24.5
Dust Content[a]	BAM 908	%w	0.30 - .40
Antioxidant Content[b]	BAM 937	%w	0.08 - 0.20

[a]Talc
[b]Irganox 565

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

Property	Units	Typical Value
Tensile Strength[a,b]	psi	900
300% Modulus[a]	%	150
Elongtaion[a]	%	1,450
Hardness[c]	Shore A	29
Specific Gravity	gm/cc	0.92
Solution Viscosity, 25%w in toluene	cps	380
Melt Index, 200°C, 5 Kg	gms/10 min.	25
Styrene/Rubber Ratio	%	22/78
Diblock Content	%	15

[a]ASTM D-412
[b]Typical properties determined on film cast from toluene solution.
[c]Typical values on polymer compression molded at 300°F

Packaging

KRATON Polymers 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 contact with food or in pharmaceutical applications, toys, and other human contact areas the relevant regulations should be observed. Detailed information is available from the supplier.

For food packaging, manufacturers of the final product should ensure that all ingredients used comply with the regulations. It should be noted that 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.

Restriction on Medical/Healthcare Applications

DO NOT USE KRATON™ POLYMERS PRODUCTS IN ANY DEVICES OR MATERIALS INTENDED FOR TEMPORARY OR PERMANENT IMPLANTATION IN THE HUMAN BODY. THE KRATON POLYMERS BUSINESS ALSO RESTRICTS THE USE OF ITS PRODUCTS IN OTHER MEDICAL/HEALTHCARE APPLICATIONS.

Please contact your KRATON Polymers Sales Representative for more details.

THE KRATON POLYMERS BUSINESS HAS NO SPECIFIC EXPERTISE IN THE MEDICAL/HEALTHCARE MARKET OR APPLICATIONS and does not intend to perform testing, clinical studies or other investigations of the suitability of its products for specific medical/healthcare applications. KRATON Polymers products are generally manufactured for use in a variety of commercial applications.

DO NOT USE THE TRADENAMES, TRADEMARKS, LOGOS OR OTHER SIMILAR IDENTIFYING CHARACTERISTICS OF THE KRATON POLYMERS BUSINESS IN THE MANUFACTURE, SALE OR PROMOTION OF MEDICAL DEVICES OR MATERIALS.

THE KRATON POLYMERS BUSINESS MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE (INCLUDING MEDICAL APPLICATIONS) FOR ITS PRODUCTS.

Each customer or user of KRATON Polymers products is solely responsible for determining the suitability of the materials they select for the intended purpose. With regards to medical/healthcare applications, each customer or user must conduct their own studies, registrations, and other related activities to establish the safety and efficacy of their products.

Safety and Handling Precautions

Read the Material Safety Data Sheet for KRATON Polymer products carefully and thoroughly before beginning any work with this product. Additional information relating to Health, Safety, Storage, Handling and Processing can be found in the KRATON Polymer HSE Fact Sheet (ref. K0155), available from your local KRATON Polymers representative.

KRATON Polymers and compounds can accumulate electrostatic charges when rubbed, chafed or abraded. Equipment should provide a means of dissipating any charges that may develop. Processing of KRATON Polymers and compounds in high shear equipment can cause the temperature to rise. Do not allow the temperature to exceed 225-230°C (437-446°F) for KRATON D Polymers and compounds and 280-285°C (536-545°F) for KRATON G Polymers and compounds. Maintain a fire watch if these temperatures are reached. KRATON Polymer 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 our knowledge, true and accurate, but any recommendations or suggestions which may be made are without guarantee, since the conditions of use are beyond our control. Furthermore, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing patents covering any material or its use.

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K0176 DDa-01U
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