

HUNTSMAN

Enriching lives through innovation

Polymer Modification

Enhance hydrophilicity



Introduction

Polyamide (Nylon) is a thermoplastic polymer with excellent performance and is widely used. ELASTAMINE® Polyetheramine can be used to modify Polyamide (Nylon) to improve its multiple properties, such as hydrophilicity, polarity and anti-static properties.

Modified Polyamide (Nylon) is widely used in various industries due to its unique properties, such as in textiles and clothing, electronic and electrical, food and industrial packaging, plastic material compounding, etc.

(A) INTRODUCTION

ELASTAMINE® Polyetheramine can be used in the synthesis of Polyamide (Nylon) elastomer by introducing Polyetheramine into the polymer backbone to improve its multiple properties, such as hydrophilicity, polarity and anti-static properties, etc.

Polyetheramine is more suitable for Nylon modification than polyether glycol, because amine reacts faster. In addition, the amide groups are more resistant to hydrolysis than ester groups.

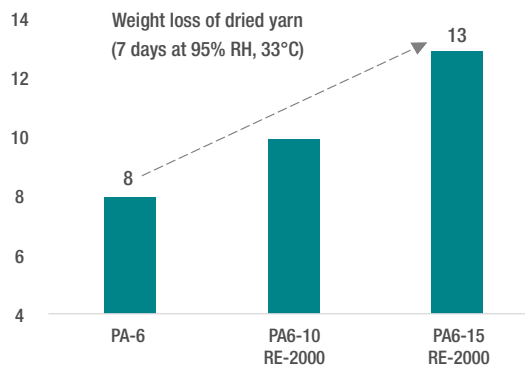


Figure 1: Water sorptivity of nylon fiber

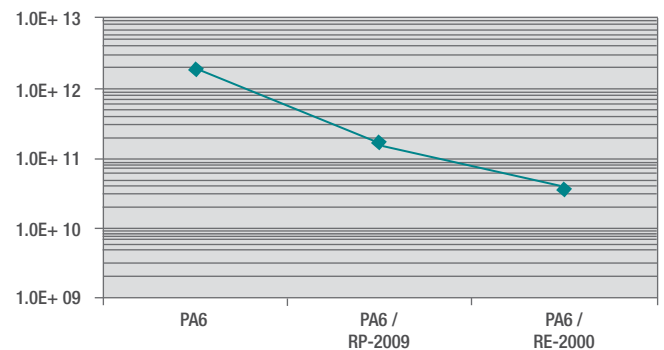


Figure 2: Reduce material resistance Ω-ISO 10965



(B) APPLICATIONS & BENEFITS

APPLICATIONS	BENEFITS
<ul style="list-style-type: none">Hydrophilic and moisture permeable nylon fiberElectronic ComponentMoisture-permeable, and anti-static packaging filmPlastic anti-static additives	<ul style="list-style-type: none">Enhanced flexibility – The polyether chain imparts the product excellent flexibility.Increased hydrophilicity, polarity and anti-static properties – The polyether backbone endows the product with hydrophilicity, polarity and anti-static properties.Higher reactivity – The activity of the terminal amino group is higher than that of the hydroxyl group. Thus the condensation reaction does not require a catalyst, and could proceed with simple operation.Versatility – Applicable to various types of nylon-such as Nylon 6, Nylon 66 and long chain Nylon (Nylon 12, Nylon 610, Nylon 612, etc.)

(C) PRODUCT RANGE

PRODUCT NAME	TYPICAL PROPERTIES*		
	COLOUR, Pt-Co	WATER, wt%	VISCOSITY, cST
RE-600	75 max	0.35 max	72 (20°C)
RE-900	100 max	0.35 max	119 (25°C)
RE-2000	50 max	0.30 max	134 (50°C)
HE-1000	50 max	0.50 max	80 (50°C)
HE-1700	50 max	0.50 max	107 (55°C)

* Properties are for reference only. Please approach Huntsman Corporation for actual specifications.



About Huntsman

Huntsman Corporation is a publicly traded global manufacturer and marketer of differentiated and specialty chemicals with 2024 revenues of approximately \$6 billion. Our chemical products number in the thousands and are sold worldwide to manufacturers serving a broad and diverse range of consumer and industrial end markets. We operate more than 60 manufacturing, R&D and operations facilities in approximately 25 countries and employ approximately 6,300 associates within our continuing operations. For more information about Huntsman, please visit the company's website at www.huntsman.com.

Huntsman Performance Products

Performance Products brings together innovation and world-leading process technologies to produce components used to formulate products that enhance people's lives. Our leading global positions in the manufacture and sale of amines, maleic anhydride and carbonates enable us to serve diverse consumer and industrial end markets, including energy, automotive and transportation, coatings and adhesives, construction and infrastructure, electronics, and industrial manufacturing. With 10 manufacturing facilities in North America, Europe, the Middle East and Asia, we produce and sell over 250 products to over 850 global customers, and provide extensive technical service support. The division had 2024 revenues of USD 1.1 billion.



www.huntsman.com/pp

Global Headquarters

Americas

Huntsman Corporation
10003 Woodloch Forest Drive
The Woodlands, Texas, 77380
USA
Tel : +1-281-719-6000

Asia Pacific

Huntsman Performance Products
No. 455 Wenjing Road
Minhang Economic & Technological
Development Zone
Shanghai 200245
P. R. China
Tel : +86-21-3357-6588

Europe, Middle East & Africa

Huntsman Performance Products
Bürohaus an der Alten Oper
Neue Mainzer Strasse 75
60311 Frankfurt
Germany

**For more information, please contact
your local Huntsman representative
or drop us an email at
pp_enquiry@huntsman.com**

Disclaimer

Huntsman Performance Products warrants only that its products meet the specifications agreed with the buyer. Typical properties, where stated, are to be considered as representative of current production and should not be treated as specifications. While all the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NO GUARANTY, WARRANTY OR REPRESENTATIONS IS MADE, INTENDED OR IMPLIED AS TO THE CORRECTNESS OR SUFFICIENCY OF ANY INFORMATION OR RECOMMENDATIONS OR AS TO THE MERCHANTABILITY, SUITABILITY OR FITNESS OF ANY PRODUCTS FOR ANY PARTICULAR USE OR PURPOSE. IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE. NOTHING IN THIS PUBLICATION IS TO BE CONSTRUED AS RECOMMENDING THE INFRINGEMENT OF ANY PATENT OR OTHER INTELLECTUAL PROPERTY RIGHT AND NO LIABILITY ARISING FROM ANY SUCH INFRINGEMENT IS ASSUMED. NOTHING IN THIS PUBLICATION IS TO BE VIEWED AS A LICENSE UNDER ANY INTELLECTUAL PROPERTY RIGHT. Products may be toxic and require special precautions in handling. The user should obtain Safety Data Sheets from Huntsman Performance Products containing detailed information on toxicity, together with proper shipping, handling and storage procedures, and should comply with all applicable safety and environmental standards. Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent on the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users. Huntsman Performance Products is an international division of Huntsman International LLC. Huntsman Performance Products trades through Huntsman affiliated companies in different countries such as Huntsman Petrochemical LLC in the USA and Huntsman Holland BV in Western Europe. Except where explicitly agreed otherwise, the sale of products referred to in this publication is subject to the Huntsman Terms and Conditions of Sale, which can be found at <https://www.huntsman.com/sales-terms-conditions>, which are incorporated herein by reference.

ELASTAMINE® is a registered trademark of Huntsman Corporation or an affiliate thereof in one or more, but not all, countries.

© 2025. Huntsman Corporation or an affiliate thereof. All rights reserved.