



**HUNTSMAN**

Enriching lives through innovation

**JEFFSPERSE®**  
Dispersants  
for Lithium-ion Batteries

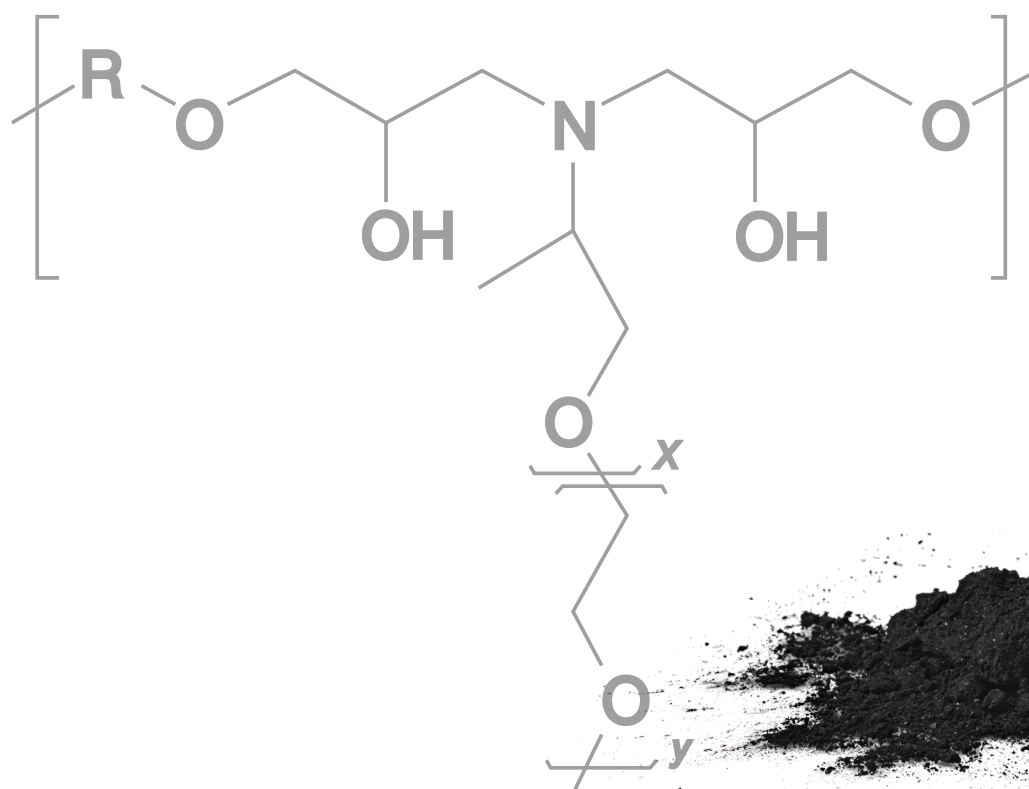


# JEFFSPERSE® Dispersants

Huntsman JEFFSPERSE® dispersants are patented polymeric dispersants for aqueous slurries. JEFFSPERSE® dispersants are comb polymers containing carbon affinic groups that provide strong, cohesive adsorption onto the particle surface and water-compatible chains which provide steric stabilization.

Within the battery manufacturing process, dispersing agents can enhance the production process of electrodes and boost their efficiency. JEFFSPERSE® dispersants help achieve higher loading of active materials and conductive agents in electrode slurries, improve particle size distribution, and form stable dispersions, enabling consistent electrode quality over time. JEFFSPERSE® dispersants are suitable for dispersing carbon particles, including carbon black & carbon nanotubes.

JEFFSPERSE® dispersants provide ease of handling and are well suited for use in aqueous systems. By reducing the number of processing solvents, shortening the manufacturing time, and improving the consistency of electrode quality over time, JEFFSPERSE® dispersants offer a cost-effective solution to enhance lithium-ion battery performance.





# JEFFSPERSE® Dispersants

JEFFSPERSE® Dispersants	X3503	X3204	XHD-070	X3202	4105
Chemistry	Epoxy, PEA	Epoxy, PEA	MDI, PEA	Epoxy, PEA	PMA, PEA
Active matter, wt%	35	40	50	25	50
Viscosity at 25°C, cSt	~600	~700	~150	400 max	100 max
Density at 25°C, g/ml	1.05	1.11	1.05	1.05	1.10
Diluent	Water	Water/PEG	Water	Water	Water
M <sub>w</sub>	~3,000	~5,000	ND	~5,000	~20,000
pH	9-11	9-12	9-11	8-10	7-9

## JEFFSPERSE® X3503

Nonionic comb polymer with higher HLB and aromatic anchoring groups, 35% active dispersant in water

- Designed to improve the dispersion, lower viscosity, and boost stability of carbon black in water-based systems

## JEFFSPERSE® X3204

Nonionic comb polymer with higher HLB and aromatic pigment anchoring groups, 40% active dispersant in water

- Designed to improve the dispersion of carbon black in water-based formulations

## XHD-070\*

Nonionic comb polymer with medium HLB . 50% active dispersant in water

- Designed to improve the dispersion of carbon black and organic pigments in water-based systems

\* Development dispersant

## JEFFSPERSE® X3202

Nonionic comb polymer with higher HLB and aromatic pigment-anchoring groups, 25% active dispersant in water

- Designed to improve the dispersion of carbon black in water-based formulations

## JEFFSPERSE® 4105

Amphoteric comb polymer 50% active dispersant in water

- Offers the flexibility of universal dispersant for a wide variety of organic and inorganic particles. Reduces dispersion viscosity, allows higher loadings, reduces particle re-agglomeration, and generates more stable slurry dispersions



## About Huntsman

Huntsman Corporation is a publicly traded global manufacturer and marketer of differentiated and specialty chemicals with 2022 revenues of approximately \$8 billion from our continuing operations. 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 30 countries and employ approximately 7,000 associates within our continuing operations. For more information about Huntsman, please visit the company's website at [www.huntsman.com](http://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 350 products to over 900 global customers, and provide extensive pre- and post-sales technical service support. The division had 2022 revenues of USD 1.7 billion.



[www.huntsman.com/pp](http://www.huntsman.com/pp)

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