



PERFORMANCE PROPERTIES

NOFIA OL1001 & OL3001

DESCRIPTION

Nofia OL1001 and Nofia OL3001 are oligomeric, reactive flame retardants (FRs). The oligomers are phosphorus-based additives with phenolic hydroxyl end groups suitable for flame retarding thermoset resins such as unsaturated polyesters, epoxies, and polyurethanes. The oligomers are highly soluble in the typical solvents used in thermoset resin processing and enable production of transparent FR thermoset resins..

BENEFITS AND FEATURES

- *Contain reactive end groups for incorporation into resins*
- *Maintain transparency in final product*
- *Highly soluble in thermoset processing solvents*
- *Achieves solid flame retardant performance: UL-94 V0 rating*

RESIN SYSTEMS

Epoxy and Polyurethanes

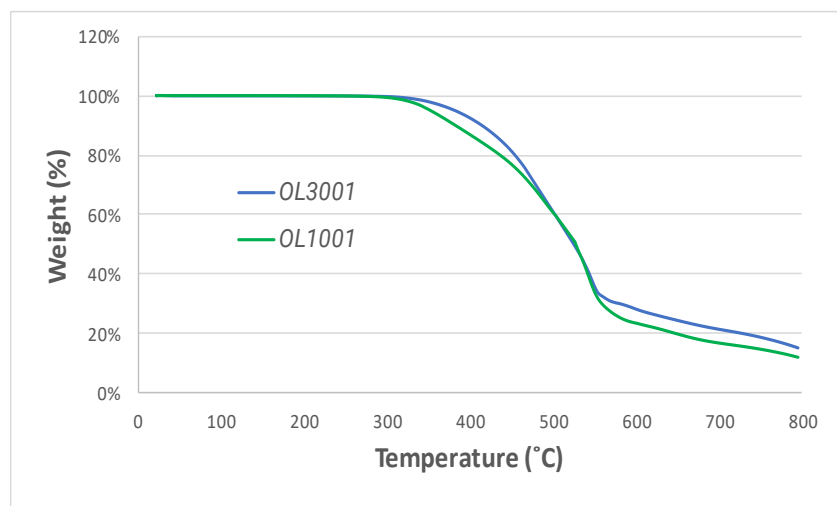
PRODUCT APPLICATIONS

Copper Clad Laminates for Printed Circuit Boards, Structural Composites, Coatings, Foams, Adhesives

TYPICAL PROPERTIES

Typical Properties	Nofia OL1001	Nofia OL3001
Appearance	coarse granules, white	coarse granules, white
Phosphorus Content (wt %)	9.0	10.0
Average Molecular Weight (Mn)	1,400	2,500
Glass Transition Temp (°C)	90	90
Hydroxyl Number (mg KOH/g)	75	50
Temperature at 5% weight loss (°C)	330	375
Optical Characteristics	Transparent	Transparent
Soluble in:	Methyl ethyl ketone (MEK), Acetone, Methyl cellosolve, Dimethylformamide (DMF)	Methyl ethyl ketone (MEK), Acetone, Methyl cellosolve, Dimethylformamide (DMF)
Insoluble in:	Water, hexane	Water, hexane

TGA Graph of Nofia Oligomers in Air



HANDLING AND USE

Nofia flame-retardants are considered non-hazardous materials when handled in accordance with standard industrial hygiene practices. Material Safety Data Sheets are available. You are encouraged to read and understand these documents before using the product.

DRYING CONDITIONS

Nofia oligomers should be handled and stored in dry conditions and should be dried if used in moisture sensitive reactions.

Drying: 75°C for at least 6 Hours
Desiccant dryer with dew point -40°C
Max Moisture Content 0.02 wt%

The information presented herein is believed to be accurate and reliable but is subject to change. It is presented without guarantee or responsibility on the part of FRX Polymers. It is the responsibility of the user to comply with all applicable laws and regulations and to provide for a safe workplace. Additional information relating to the product can be obtained from the Material Safety Data Sheet. Nothing in this Data Sheet shall be construed to modify any of FRX Polymers standard terms and conditions of sale nor shall be construed to constitute a representation or warranty, express or implied, regarding the product's characteristics use, quality safety merchantability or fitness for a particular purpose. Nothing contained herein shall constitute permission or recommendation to practice any intellectual property without the permission of the owner.

FRX Polymers, Inc.

200 Turnpike Road
Chelmsford, MA 01824

Tel: +1 (978) 250-4200 • **Fax:** +1 (978) 250-4533

Email: info@frxpolymers.com

www.frxpolymers.com

