



Product Technical Data Sheet

LINE-X XS-350

Product Manufacturer:

LINE-X Franchise Development Corporation
6 Hutton Centre Drive, Suite 500
Santa Ana, CA 92707

GENERAL PRODUCT DESCRIPTION:

LINE-X XS-350 is two components, 100% high performance aromatic polyurea spray elastomer system. Zero VOC (Volatile Organic Compounds), 100% solid. LINE-X XS-350 offers outstanding performance and superior elastomeric protective coatings for various substrates. LINE-X XS-350 designed as a user friendly product, moisture insensitive applications because of its pure polyurea chemistry, and offers exceptional adhesion properties to properly prepared substrates. The high performance chemicals formulation of LINE-X XS-350 produces an excellent skin formation for chemical resistances and moisture protection barrier.

FEATURES:

- Excellent Thermal Stability
- Meets USFDA Criteria – Incidental Food Contact Applications
- Low Permeability Rate
- Low Temperature Flexibility
- Good Chemical Resistance
- Seamless
- Fast Reactivity and Cure Time (No Catalysts)
- Non-Reactive

AREAS OF APPLICATIONS:

- Force Mitigation
- Blast Mitigation
- High Performance Protective Coatings Applications
- High Chemical Resistance Applications

APPLICATION:

Both Iso "A" Side and Resin "B" Side should be preconditioned between 70° – 90° F before application.

Line-X XS-350 must be applied using a high-pressure, plural component, heated, 1:1 by volume, spray equipment with 2000 PSI fluid pressure capability.

Line-X XS-350 material both Iso "A" Side and Resin "B" Side should be heated between 120° – 150° F, and spray equipment generate adequate fluid pressure for proper mixing and best polymerization result.

APPLICATION EQUIPMENT:

LINE-X XS-350 is designed to spray through a high pressure impingement mixing equipment, plural component spray equipment must have materials heat-control capability, 1:1 by volume, can either spray with round or flat tip. Refer to equipment manufacturer for equipment specifics and accessories.

EQUIPMENT SETTING PARAMETERS:

ISo "A" and Polyol "B" components must be pumped by low-pressure transfer pumps to a high-pressure proportional pumping equipment.

Temperature Setting:

ISo "A" Block Heater: 140 – 160 Deg. F
Resin "B" Block Heater: 140 – 160 Deg. F
Hoses (Iso and Polyol): 140 – 150 Deg. F

Hydraulic Pressure Setting:

Equipment Hydraulic Pressure: 2,000 – 2,500 PSI



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EQUIPMENT CLEAN-UP:

Spray equipment should be cleaned immediately right after use and be sure to follow equipment manufacturer's recommended procedures. Please refer to spray equipment operating and maintenance procedures for further details. Line-X XS-350 should be cleaned with environmentally safe urethane-grade cleaner, cleaning materials must be free of reactive contaminants such as water, and alcohol. All gun cleaners, and spray equipment cleaning materials must be used and disposed permitted under local rules and regulations.

MATERIAL STORAGE:

Line-X XS-350 has a shelf life of 12 twelve months from manufactured date in factory sealed containers.

Line-X XS-350 has to be stored between 65° F – 80° F. Do not expose un-used materials to humid condition; always provide air tight reseal conditions to un-used materials. Materials that are currently connecting to the pumps, always provide as much air tight/moisture free conditions to un-used materials as possible to ensure proper chemical performance.

Drums should be stored on pallet to avoid direct contact with warehouse floor/ground.

SAFETY AND HANDLING:

Please refer to MSDS for safety and handling of this material. All personnel working with this material are expected to read and understand the safety recommendations per MSDS. All Personal Protection Equipment must be proper worn to protect worker health and safety.

CHEMICAL TECHNICAL DATA:

Mix Ratio By Volume	1A:1B
Gel Time	6-9 Sec
Tack Free Time	9-12 Sec
Viscosity (cPs) @ 77 Deg. F.	
"A" Iso Side	1000±100
"B" Resin Side	370±50
Material Density (lbs/gal) @ 77 Deg. F.	
"A" Iso Side	9.50 lbs/gal
"B" Resin Side	8.40 lbs/gal

BASIC PHYSICAL PROPERTIES:

All tests are performed by OCM Test Laboratories.

- ISO 17025 Certified
- American Association for Laboratory Accreditation (A2LA)

Test Name	Test Methods	Value
Hardness Shore D	ASTM D2240	60 ± 1
Coefficient of Friction	ASTM D1894	
Static		0.305
Kinetic		0.127
Dielectric Const.	ASTM D150	3.6
Dissipation Factor	ASTM D150	0.031
Volume Resistance	ASTM D257	2.3 x10 ¹⁴ ohm cm
Elongation	ASTM D412	82%
Flexural Strength	ASTM D790	2630 PSI
Flexural Modulus	ASTM D790	0.056 MSI
Fungus Test	MIL-STD 810F	Pass
Pull-off Test – Adhesion	ASTM C297	
To Metal – No Primer		1,800 PSI
To Metal – XPM Primer		1,910 PSI
To Metal – SF515 Primer		XXX
Taber Abrasion(gm/1000 cycles)	ASTM D2240	0.06980
Tear Strength	ASTM D624	XXX
Tensile Strength	ASTM D412	2,010 PSI
Water Vapor Trans.	ASTM E96	XXX

ADDITIONAL PRODUCT CERTIFICATIONS:

- USFDA Coatings for Incidental-Food-Contact Applications Certified by Keller and Heckman LLP
- MIL-STD-810F



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Chemical Resistances per ASTM D543 for immersion in fluids methods:

Line-X XS-350 materials are immersed in the chemicals below for a period of 7 days; physical properties of pre and post-immersion were measured to quantify the changes in product physical properties.

Chemical Names	Volume Change (%)	Hardness Change (%)	Elongation ASTM D412 Change (%)	Tensile Strength ASTM D412 Change (%)	Recommendations
Acetic Acid	177%	-88%	-69%	-94%	No – Soft
Acetic Acid 10%	6%	-13%	56%	-13%	Yes
Acetone	34%	-52%	-29%	-77%	No – Soft
Alcohol (Rubbing)	52%	-63%	-17%	-69%	No – Soft
Ammonium Chloride 30%	2%	-1%	76%	40%	Yes
Ammonium Hydroxide	2%	-1%	59%	22%	Yes
Automotive Gasoline	11%	-13%	-14%	-39%	Yes
Automotive Oil	13%	-14%	74%	45%	Yes
Aviation J.P. Fuel	8%	-8%	39%	-5%	Yes
Baking Soda 25%	3%	-4%	68%	30%	Yes
Benzene	13%	-16%	-37%	-72%	Yes
Bleach (Chloride)	2%	-7%	50%	12%	Yes
Boric Acid 3%	6%	-12%	65%	22%	Yes
Brake Fluid (DOT 3)	30%	-39%	7%	48%	Yes-Incidental Contact
Calcium Chloride 50%	2%	-8%	71%	50%	Yes
Calcium Hypochloride 5%	4%	-5%	48%	11%	Yes
Chrome Acid 10%	-2%	-8%	-20%	-18%	No
Citric Acid 10%	2%	-4%	71%	30%	Yes
Club Soda	3%	-5%	49%	13%	Yes
Cream Soda	2%	-6%	66%	22%	Yes
Crude Oil (Heating)	7%	-4%	35%	11%	Yes
Diesel Fuel	5%	-6%	48%	33%	Yes
Ethylene Glycol	3%	-7%	55%	19%	Yes
Formic Acid 90%	160%	-93%	NA	NA	No – Soft, Blister
Formic Acid 10%	12%	-23%	60%	-29%	Yes-Incidental Contact
Formic Acid 5%	14%	-26%	61%	-31%	Yes-Incidental Contact
Hydraulic Fluid (Oil)	2%	-2%	45%	47%	Yes
Hydrochloride Acid 45%	74%	-51%	-40%	-78%	No – Soft
Hydrogen Peroxide 30%	4%	-6%	55%	13%	Yes
Hydrogen Peroxide 10%	4%	-7%	80%	22%	Yes
Isopropyl Alcohol	32%	-34%	40%	-50%	Yes
Kerosene	8%	-6%	53%	9%	Yes
Lactic Acid 20%	4%	-7%	79%	18%	Yes
Lactic Acid 45%	7%	-13%	55%	5%	Yes
MEK (Methyl Ethyl Ketone)	48%	-58%	-29%	-76%	No – Soft
Methanol	49%	-59%	-11%	-73%	No – Soft
Methylene Chloride	12%	-22%	-51%	-84%	Yes
Mineral Spirits	4%	-1%	37%	13%	Yes
Nitric Acid 10%	6%	-9%	55%	-6%	No – Surface Crack
Phosphoric Acid 100%	36%	-20%	19%	-6%	No - Soft



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Chemical Resistances per ASTM D543 for immersion in fluids methods:

Line-X XS-BK 100 materials are immersed in the chemicals below for a period of 7 days; physical properties of pre and post-immersion were measured to quantify the changes in product physical properties.

Chemical Names	Volume Change (%)	Hardness Change (%)	Elongation ASTM D412 Change (%)	Tensile Strength ASTM D412 Change (%)	Recommendations
Phosphoric Acid 50%	4%	0%	46%	27%	Yes
Potassium Hydroxide 50%	2%	-3%	65%	47%	Yes
Saline Solution 30%	3%	-8%	NA	NA	Yes
Sea Water	3%	-7%	79%	24%	Yes
Sodium Carbonate 10%	4%	-8%	57%	23%	Yes
Sodium Chloride 30%	2%	-4%	63%	31%	Yes
Sodium Hydroxide 50%	0%	4%	-9%	49%	Yes
Sodium Hydroxide 10%	2%	-8%	74%	26%	Yes
Sodium Sulfate 30%	5%	-7%	54%	6%	Yes
Sodium Sulfate 20%	2%	-1%	74%	30%	Yes
Sugar Solution 30%	2%	-6%	62%	23%	Yes
Sulfuric Acid 50%	81%	-49%	-35%	-77%	No – Soft
Sulfuric Acid 25%	2%	-2%	67%	39%	Yes
Sulfuric Acid 10%	2%	-8%	54%	28%	Yes
Tannic Acid 40%	4%	-7%	47%	30%	Yes
Toluene	17%	-18%	-29%	-63%	Yes
1,1,1 - Trichloroethylene	8%	-13%	-53%	-79%	Yes
Xylene	17%	-24%	-3%	-59%	Yes
Water (H2O)	2%	-9%	77%	29%	Yes

LIMITATIONS:

The chemical resistance chart should be consulted prior to application; this is an exhaustive chemical compatibility list quantifying pre and post physical properties for chemicals exposure per ASTM D543. Application specific processing parameters such as temperature, and operating pressure of coated objects must be considered before installing Line-X XS-350 coatings system.

PRODUCT USER RESPONSIBILITIES:

Users of Line-X XS-BK 350 product are responsible for reading the general guidelines, product data sheets, specifications and material safety data sheets (MSDS) before using this materials. Printed technical data and instructions are subject to change

without notices. Contact your local Line-X representative or visit our website www.golinex.com for current technical data instructions.

PRODUCT DISCLAIMER:

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the users responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazards listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and LINE-X FDC makes no claim that these tests or any other tests accurately represent all environments.