

**PRODUCT MANUFACTURER:**

LINE-X LLC  
 1862 Sparkman Dr.  
 Huntsville, AL 35816  
 877-330-1331

**GENERAL PRODUCT DESCRIPTION:**

LINE-X XS-100 is a two-component, high performance aromatic polyurea/polyurethane hybrid spray elastomer system zero VOC (Volatile Organic Compounds), 100% solid. LINE-X XS-100 offers outstanding performance and superior elastomeric protective coatings for various substrates. LINE-X XS-100 is designed as a user-friendly product with a built-in activator for quick cure times, and offers exceptional adhesion properties on properly prepared substrates. The high performance formulation of LINE-X XS-100 produces an excellent skin formation for chemical resistance and moisture protection.

**APPLICATION GUIDELINES:**

Both the Iso A side and Resin B side should be preconditioned between 70-90°F before application. LINE-X XS-100 must be applied using high-pressure, plural component, heated, 1:1 by volume, spray equipment with 2000 PSI fluid pressure capability. LINE-X XS-100 material (both Iso A side and Resin B side) should be heated between 120-150°F. Spray equipment must generate adequate fluid pressure for proper mixing and best polymerization results.

**APPLICATION EQUIPMENT:**

LINE-X XS-100 is designed to be sprayed through high pressure impingement mixing equipment. Plural component spray equipment must have material heat-control capability, 1:1 by volume, and sprayable 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 suitable high-pressure proportional pumping system.

Temperature Settings

Iso A Block Heater:	140-160°F
Resin B Block Heater:	140-160°F
Hoses (Iso and Polyol):	130-150°F

Hydraulic Pressure Setting

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

**EQUIPMENT CLEAN-UP:**

Spray equipment should be cleaned immediately after use following equipment manufacturer's recommended procedures. Please refer to spray equipment operating and maintenance procedures for further details. LINE-X XS-100 should be cleaned with environmentally safe urethane-grade cleaners. 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 of as permitted under local rules and regulations.

**MATERIAL STORAGE:**

LINE-X XS-100 has a shelf life of twelve (12) months from manufacture date in factory sealed containers. LINE-X XS-100 should be stored between 60-100°F. Do not expose unused materials to high humidity conditions. Always provide airtight reseal conditions to unused materials. For materials that are currently connecting to the pumps, always provide as much airtight and moisture-free conditions to unused materials as possible to ensure proper chemical performance. Drums should be stored on pallets to avoid direct contact with the 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 all safety recommendations per MSDS. All Personal Protection Equipment must be properly worn to comply with worker health and safety requirements.

**CHEMICAL TECHNICAL DATA:**

Mix Ratio by Volume:	1A:1B
Gel Time:	6-9 Sec
Tack Free Time:	10-15 Sec
Viscosity (cPs) @ 77°F:	
A Iso Side:	550±100
B Resin Side:	1100±100
Material Density (lbs/gal) @ 77°F:	
A Iso Side:	9.6 lbs/gal
B Resin Side:	8.6 lbs/gal



**BASIC PHYSICAL PROPERTIES:**

All tests are performed by independent third-party material test laboratories:

- OCM Test Laboratories
- ISO 17025 Certified
- American Association for Laboratory Accreditation (A2LA)
- Truesdail Laboratories, Inc.
- Pira International Materials Test Lab

<u>Test Name</u>	<u>Test Methods</u>	<u>Value</u>
Hardness Shore D	ASTM D2240	50±1
Coefficient of Friction	ASTM D1894	
Static		0.546
Kinetic		0.185
Dielectric Const.	ASTM D150	3.5
Dissipation Factor	ASTM D150	0.026
Volume Resistance	ASTM D257	2.4x10 <sup>13</sup> ohm.cm
DMA Test (Loss Modulus, E" Tg)	ASTM D4065	-39°C
Elongation	ASTM D412	91%
Flexural Strength	ASTM D790	1,190 PSI
Flexural Modulus	ASTM D790	0.024 MSI
Fungus Resistance	MIL-STD 810F	Pass
Pull-off Test-Adhesion	ASTM C297	
To Metal - No Primer		1,300 PSI
To Metal - XPM Primer		1,750 PSI
To Metal – LX SF-515 Primer		1,930 PSI
Taber Abrasion (gm Loss/1000 cycles)		
	ASTM D4060	0.1525
Tear Strength	ASTM D624	490 lbs/in
Tensile Strength	ASTM D412	2,147 PSI
Water Vapor Trans.	ASTM E96	0.796 Grains per hr. x sq. ft.
Methane Permeability	ASTM D1434	132 cc/m <sup>2</sup> . Day
Safe Walking Surfaces	ASTM F1637.95	
	Dry	.98
	Wet	.87
Salt Spray	ASTM B117	Rating 10 @ 3,000 hrs
Impact	ASTM D2794	134 in-lbs
Thermal Conductivity (DSC)	ASTM E1952	.14 W/Km

**ADDITIONAL PRODUCT CERTIFICATIONS:**

- ANSI/NSF 61 – 5 (Barrier Material) Coatings for Water Tanks – Certified by Truesdail Laboratory -Only for XS-100 Natural Color
- USFDA Coatings for Incidental-Food-Contact Applications Certified by Keller and Heckman LLP
- MIL-STD-810F –Fungus Resistance



**CHEMICAL RESISTANCES PER ASTM D543 FOR IMMERSION IN FLUIDS METHODS:**

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

Chemical Name	Volume Change (%)	Hardness Change (%)	Elongation ASTM D412 Change (%)	Tensile Strength ASTM D412 Change (%)	Recommendations
Ammonium Chloride 30%	2%	-11%	NA	NA	Yes
Ammonium Hydroxide	3%	-2%	125%	-45%	Yes
Automotive Gasoline	11%	-29%	-46%	-57%	Yes
Automotive Oil	0.5%	-11%	113%	-37%	Yes
Aviation J.P. Fuel	19%	-31%	-29%	-42%	Yes
Baking Soda 25%	3%	-17%	108%	-46%	Yes
Benzene	-2%	-19%	108%	-61%	Yes
Boric Acid 3%	17%	-2%	4%	-44%	Yes
Calcium Chloride 50%	4%	-27%	3%	-42%	Yes
Calcium Hypochloride 5%	4%	-13%	0.4%	-48%	Yes-Secondary Containment
Citric Acid 10%	5%	-23%	111%	-46%	Yes
Club Soda	0%	-3%	59%	0.6%	Yes
Cream Soda	4%	-21%	9%	-45%	Yes
Crude Oil (Heating)	12%	-15%	10%	-48%	Yes
Diesel Fuel	8%	-15%	2%	-42%	Yes
Ethylene Glycol	4%	-20%	3%	-53%	Yes
Hydraulic Fluid (Oil)	4%	-20%	4%	-37%	Yes
Hydrogen Peroxide 10%	9%	-22%	130%	-54%	Yes
Kerosene	8%	-17%	77%	-51%	Yes
Lactic Acid 20%	11%	-28%	101%	-54%	Yes
Methylene Chloride	1%	-20%	NA	NA	Yes
Mineral Spirits	8%	-16%	-6%	-45%	Yes
Nitric Acid 10%	13%	-28%	122%	-54%	Yes-Secondary Containment
Potassium Hydroxide 50%	4%	-17%	-10%	-5%	Yes
Saline Solution 30%	3%	-19%	2.8%	-41%	Yes
Sea Water	3%	-20%	5%	-44%	Yes
Sodium Carbonate 10%	2%	-19%	8%	-38%	Yes
Sodium Chloride 30%	4%	-13%	29%	-38%	Yes
Sodium Hydroxide 50%	23%	-15%	95%	-46%	Yes
Sodium Hydroxide 10%	-12%	-13%	102%	-45%	Yes
Sodium Sulfate 30%	3%	-21%	143%	-39%	Yes
Sodium Sulfate 20%	3%	-17%	125%	-44%	Yes
Sugar Solution 30%	4%	-20%	20%	-45%	Yes
Sulfuric Acid 10%	6%	-26%	2%	-40%	Yes
Toluene	-1%	-21%	82%	-66%	Yes
Water (H2O)	3%	-20%	-5%	-45%	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-100 coating systems.

### **PRODUCT USER RESPONSIBILITIES:**

Users of LINE-X XS-100 product are responsible for reading the general guidelines, product data sheets, specifications and material safety data sheets (MSDS) before using these materials. Printed technical data and instructions are subject to change without notice. Contact your local LINE-X representative or visit our website at [www.LINE-X.com](http://www.LINE-X.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 user's 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. 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 makes no claim that these tests or any other tests accurately represent all environments.

