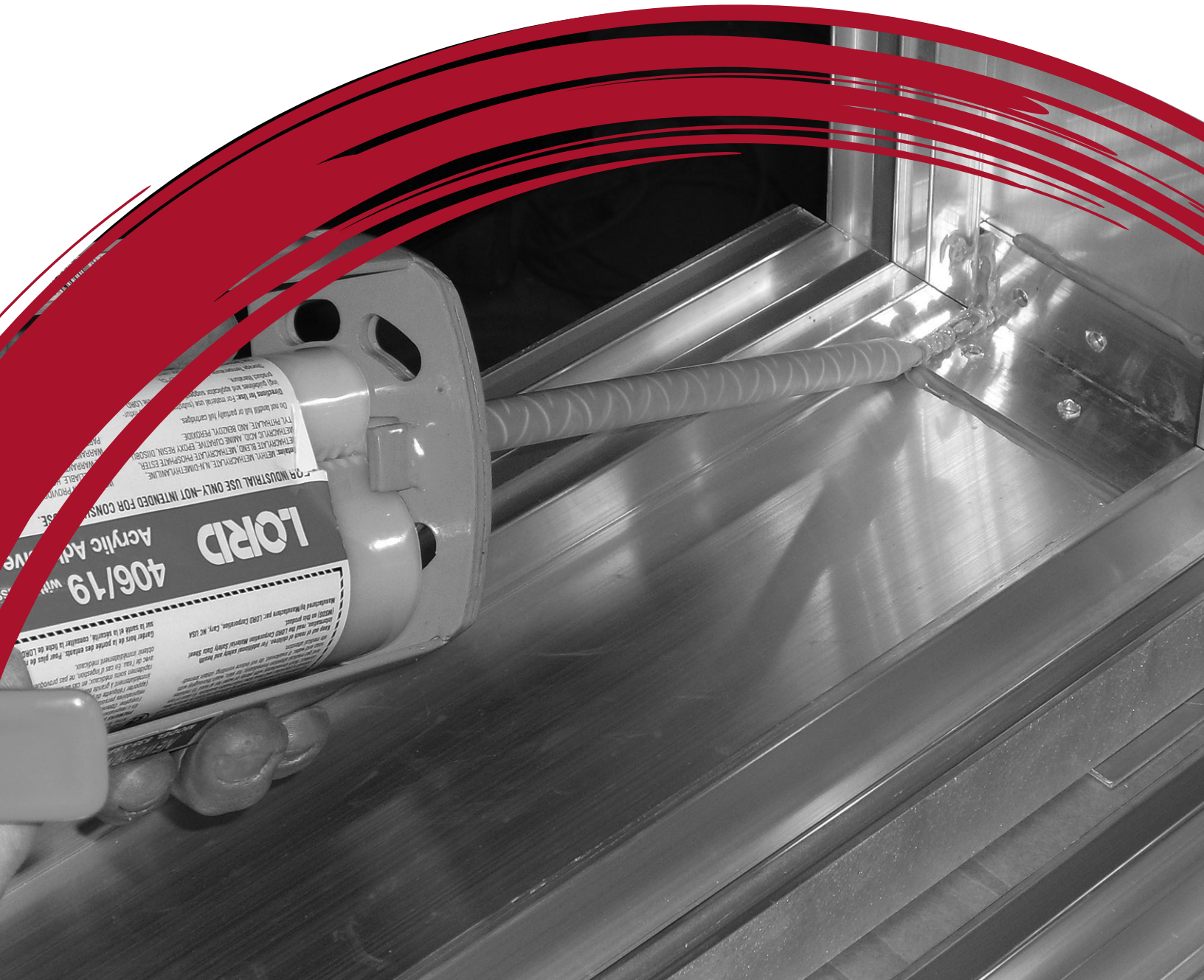




METAL BONDING ADHESIVES

FOR MANUFACTURING & ASSEMBLY APPLICATIONS



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GENERAL ASSEMBLY & MANUFACTURING OVERVIEW

If you're looking to improve your assembly process, metal-to-metal bonding adhesives offer a wide range of benefits. With uncertain economic conditions, skilled labor shortages and supply chain issues – switching to adhesives can give you advantages that traditional assembly methods can't match.

METAL BONDING **ADHESIVE SOLUTIONS**

Welding and riveting are traditional methods for bonding metal, but they can be time-consuming and costly. Adhesive bonding offers a cost-effective alternative, allowing manufacturers to create sleek, lightweight designs without compromising on strength and durability.



Benefit #1 **Improved Strength & Durability**

Traditional metal bonding methods like welds and rivets only bond at certain points. With adhesives you can get a bond on the entire seam, effectively spreading out the load, making your assembly more resistant to tearing and shearing forces.

In addition, adhesives are corrosion-resistant and do not require heating the material to high temperatures which can create heat-affected-zones (HAF), weakening the metal. Assemblies with adhesive bonds do not require drilling so there is no holes created for water incursion. Adhesives bond and seal in one step creating a durable, weatherproof end product.



Benefit #2 **Design Flexibility**

Adhesives allow for design options that are not possible with traditional fastening methods. With adhesive, you're able to join thinner materials which can help you reduce weight and cut your material costs.

This allows you to effectively lightweight your end products, making them faster, stronger, and more efficient. You can also bond dissimilar metals or join metals to composites and other materials. Whatever factor you need to optimize in your build, chances are adhesives can help you do it.



Benefit #3 **Reduced Cost**

Adhesive bonding often requires fewer components and less skilled labor and less labor overall, resulting in significant cost savings.

Most metal bonding adhesives require minimal surface prep, plus there are many cure time intervals available to meet the timing demands of your assembly line process without the need for highly skilled labor.



THE EXPERTS IN **METAL BONDING ADHESIVES**

Chemical Concepts is a business-to-business provider of engineered solutions involving adhesives, sealants, tapes and specialty fasteners.

With 60+ years of experience pioneering the use of adhesives, Chemical Concepts takes pride in providing custom-engineered solutions designed to meet your needs. We consult with companies every day to overcome challenges in design, process and labor by providing high-performance products and expert support, delivered on time.

We're more than just an adhesives supplier. We're a solutions provider.

FEATURED METAL **BONDING BRANDS**

To help you find the right adhesive for your manufacturing process, we've partnered with some of the highest-performing and most trusted brands in the industry.



ADHESIVE SELECTOR CHART

Choose the adhesive right for you.

	Aluminum Steel Stainless Steel Prefinished Metals	Galvanized Steel	Copper/Brass	ACM/MCM
Aluminum Steel Stainless Steel Prefinished Metals	LORD® 4XX Series LORD® Maxlok LORD® 810/20GB LORD® 850/25GB PLEXUS MA830 PLEXUS 81XXGB Araldite® 2053 Araldite® 2050/2051 Araldite® 2080 <small>Chem-Set</small> UltraLoK 42X Series <small>Chem-Set</small> UltraLoK 3121 WELD-ON #45 WELD-ON #30	LORD® 850/25GB PLEXUS 81XXGB Araldite® 2051	WELD-ON #45	LORD® 810/20GB <small>Chem-Set</small> UltraLoK 3121
Galvanized Steel		LORD® 850/25GB PLEXUS 81XXGB Araldite® 2051	LORD® 850/25GB PLEXUS 81XXGB Araldite® 2051	LORD® 850/25GB PLEXUS 81XXGB Araldite® 2051
Copper/Brass			WELD-ON #45	LORD® 850/25GB PLEXUS 81XXGB Araldite® 2051
ACM/MCM				LORD® 810/20GB <small>Chem-Set</small> UltraLoK 3121

LORD® 400 Series

- All-around metal bonder
- High temperature/powder coating



Characteristics	403	406	410
Working Time (minutes)	2-4	6-10	20-45
Handling Time (minutes)	4-6	12-17	60-120
Elongation	30%		
Tensile Strength	2700 psi (18.6 MPa)		
Mix Ratio	4:1		
Colors	Tan to Green		
Sizes	50ml, 210ml, 404ml (CX), 415ml		

LORD® Maxlok Series

- All-around metal bonder
- High temperature/powder coating
- High peel strength
- Glass beads



Characteristics	T3	T6	T18
Working Time (minutes)	3-5	6-9	18-24
Handling Time (minutes)	6-8	20-24	48-72
Elongation	>10%		
Tensile Strength	2800 psi (19.3 MPa)		
Mix Ratio	4:1		
Colors	Off white to Tan		
Sizes	50ml (T6 Only), 415ml		



LORD® 810/20 GB

- Low read through
- Highly flexible
- Glass beads

Characteristics	
Working Time (minutes)	8-12
Handling Time (minutes)	20-25
Elongation	190%
Tensile Strength	841 psi (5.8 MPa)
Mix Ratio	2:1
Colors	Gray Paste
Sizes	400ml



LORD® 850/25 GB

- Glass beads
- Galvanized bonder
- Highly flexible

Characteristics	
Working Time (minutes)	6-10
Handling Time (minutes)	18-24
Elongation	100%
Tensile Strength	2610 psi (18.0 MPa)
Mix Ratio	10:1
Colors	Red Paste
Sizes	250ml, 490ml



Plexus MA830

- Fast working time 4 - 6 mins
- Dissimilar materials
- High fatigue endurance/toughness
- High impact resistance

Characteristics

Working Time (minutes)	4-6
Handling Time (minutes)	15-25
Elongation	30%-60%
Tensile Strength	3,200 - 3,800 psi (22.0 - 26.2 MPa)
Mix Ratio	10:1
Colors	Gray
Sizes	490ml



Plexus 81XXGB Series

- Galvanized bonder
- Low odor
- Highly flexible
- Glass beads

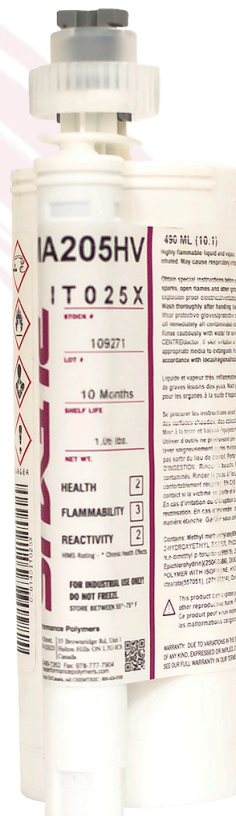
Characteristics	8105	8110	8120
Working Time (minutes)	3-6	8-12	18-22
Handling Time (minutes)	12-14	33-36	50-60
Elongation	5-11%	25-45%	45-55%
Tensile Strength	3,500 psi - 3,800 psi (20.7 - 24.8 MPa)	3,500 psi (21.4 MPa) - 3,800 psi (24.8 MPa)	3,100 psi (17.2 MPa) - 3,500 psi (20.6 MPa)
Mix Ratio	1:1		
Colors	Gray		
Sizes	50ml, 400ml		



Plexus AO420 (MA420)

- All-around metal bonder
- Ultra fast fixture times

Characteristics	
Working Time (minutes)	4-6
Handling Time (minutes)	18-22
Elongation	30%-50%
Tensile Strength	2,700 psi (18.6 MPa) - 3,000 psi (20.7 MPa)
Mix Ratio	10:1
Colors	Blue, Black, Cream
Sizes	490ml



Plexus MA205HV

- All-around metal bonder
- High temperature
- Color change technology for quality assurance
- Fast fixture time

Characteristics	
Working Time (minutes)	3-5
Handling Time (minutes)	7-9
Elongation	20%-50%
Tensile Strength	2,000 psi (13.8 MPa) - 2,500 psi (17.2 MPa)
Mix Ratio	10:1
Colors	Blue
Sizes	490ml



Araldite 2080

- Low odor
- Non-flammable
- Non-hazardous for shipping
- Comparable performance to standard MMAs

Characteristics	2080-5	2080-15
Working Time (minutes)	5-7	15
Handling Time (minutes)	7-8	19-21
Elongation	85%	50%
Tensile Strength	3,626 psi	4,060 psi
Mix Ratio	10:1	
Colors	Off white, Light Gray	
Sizes	50ml, 500ml	



Araldite 9102

- Great for large sheet lamination and honeycomb panels
- Long work life
- Low shrinkage
- High heat resistance

Characteristics	
Working Time (minutes)	80
Handling Time (hours)	8-9
Mix Ratio	2:1
Elongation	2.3%
Tensile Strength	507 psi
Colors	Off white
Sizes	5 Gallon Pails 55 Gallon Drums



Araldite 2053

- All-around metal bonder
- Budget friendly
- Highly flexible

Characteristics	2053-05	2053-15
Working Time (minutes)	5	15
Handling Time (minutes)	20	40
Elongation	50%	60%
Tensile Strength	2,900 psi	2,750 psi
Mix Ratio	10:1	
Colors	Dark Gray	
Sizes	50ml, 500ml	



Araldite 2050/2051

- Extreme conditions
- Ultra fast curing
- Cures underwater
- Ultra fast curing

Characteristics	2050 For Extreme Low Temperature	2051 For Extreme High Temperature
Working Time (minutes)	9 @ 73°F 12 @ 50°F 40 @ 32°F 90 @ 14°F 4 hours @ -4°F	6 @ 104°F 10 @ 86°F 15 @ 73°F 30 @ 50°F 90 @ 32°F
Handling Time (minutes)	13 @ 73°F 20 @ 50°F 60 @ 32°F 3 hours @ 14°F 8 hours @ -4°F	10 @ 104°F 15 @ 86°F 25 @ 73°F 50 @ 50°F 2 hours @ 32°F
Elongation	~10%	
Tensile Strength	5,800 psi	
Mix Ratio	1:1	
Colors	Pale Yellow	
Sizes	50ml, 380ml	



Ultralok UL42X Series

- Budget friendly
- Variable cure speeds
- Wide array of packaging options, colors, and features

Characteristics	UL420	UL421	UL422
Working Time (minutes)	3-7	8-12	18-24
Handling Time (minutes)	9-15	20-30	35-50
Mix Ratio	10:1		
Elongation	<100%		
Tensile Strength	1000-3500 psi		
Colors	Gray, Natural, Black		
Sizes	50ml, 250ml, 500ml, 825ml		



Ultralok 3121

- Budget friendly
- Low read through
- Highly flexible

Characteristics	
Working Time (minutes)	4-6
Handling Time (minutes)	10-15
Elongation	100%
Tensile Strength	2,200 psi
Mix Ratio	10:1
Colors	Straw
Sizes	50ml, 250ml, 500ml



Weld-On 30

- All-around metal bonder
- Variable cure speeds
- Non-sag

Characteristics	
Working Time (minutes)	4-5
Handling Time (minutes)	15-20
Elongation	27%
Tensile Strength	2,600 psi
Mix Ratio	10:1
Colors	Off white
Sizes	500ml



Weld-On 45

- All-around metal bonder
- Bonds non-ferrous & dissimilar metals
- High impact resistance

Characteristics	
Working Time (minutes)	5-6
Handling Time (minutes)	15
Elongation	50%
Tensile Strength	2,000 psi
Mix Ratio	4:1
Colors	Tan
Sizes	50ml, 500ml

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