ADINOX®
METAL BONDING SOLUTIONS

Technical Data Sheet
ADINOX® M305
23/01/2025

Description

Two component methyl methacrylate adhesive with medium cure time. Formulated to bond a wide range of various substrates, including fiberglass, steel, aluminum, some plastics and composite materials. It is resistant to impact and aging. ADINOX M305 is flexible, resists thermal cycling, is resistant to a wide range of chemicals and environmental conditions.

- Requires little or no initial preparation of the parts to be bonded.
- Excellent bond strength, impact and fatigue resistance.
- It is easy to apply, non-drip, thixotropic and cures at room temperature.
- Open time 2 to 4 minutes, working time 6 to 8 minutes.
- Ideal for automotive applications, thermoformed parts, household appliances, electrical components, signs and advertisements, metal parts and furniture.

Application

Metals: aluminum, stainless steel, carbon steel, coated metals, zinc coated.

Thermoset Plastics: fiberglass, phenolics, gel coats, epoxies, urethane, polyurethane, carbon fiber, resins - RIM.

Thermofluid plastics: acrylics, ABS, PBT, polycarbonate, nylon, PPO, vinyl, polystyrene, pet mixes, you can also adhere wood and ceramics.

Physical properties of the product in liquid state:

Viscosity at 77°F

Resin, cps:	40,000 - 60,000
Activator, cps:	40,000 - 60,000
Color:	Amber
Mixed density:	8.55
Mixing Ratio	
By Volume:	1:1
By weight:	1:1
Thixotropic index:	5

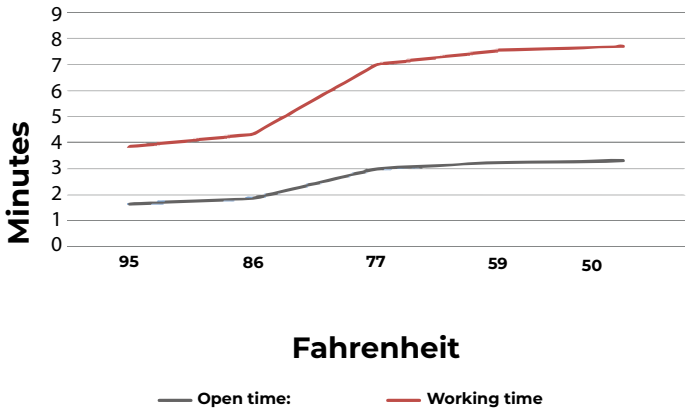
Physical properties of the product in solid state:

Shear strength, PSI:	1750 - 2800
Tensile strength, PSI:	3200 - 3750
Open time, min:	4 - 6
Working time, min:	12 - 15
Filling capacity, Max:	3 mm
Operating temperature range:	-40 - 186 °F
Hardness ASTM D2240:	72-78D
Flexibility DIN 53283:	20% at 30%

Overlap shear strength according to ASTM D 1002:

Material	Shear stress in PSI and failure
Stainless steel / Stainless steel	3,150-3,480 Cohesive failure
Aluminum / Aluminum	3,200- 3,750 Cohesive failure
ABS / ABS	1,200 - 1,500 Substrate failure
FRP / FRP	1,500-1700 Fiber failure
Aluminum / ABS	2,000- 2,200 Substrate failure

Room temperature curing time



Chemical resistance

The chemical resistance of M305 was studied by bonding Aluminum / Aluminum and curing for 7 days at 77°F then kept immersed in the media listed here and tested for overlapping shear strength.

Effect of immersion in different media.
(Immersion for 1 month in various media)

Material	Shear stress in PSI
Gasoline	3250
Acetic acid (10%)	3190
Xylene	3200
Lubricating oil HD30	3300
Kerosene	3150
Water at 73 °F	3145
Water at 194 °F	3000

Cautions

ADINOX M305 is flammable. Keep away from heat, sparks and open flames. KEEP OUT OF REACH OF CHILDREN. Keep containers closed when not in use. Avoid contact with skin and eyes. Harmful if swallowed. Refer to Material Safety Data Sheet for complete safety information (MSDS).
Note: The chemical reaction that occurs when the two materials are mixed generates heat. The amount of heat generated depends on the mass and thickness of adhesive applied. Large amounts of adhesive (over 1.5 cm thick) can generate temperatures above 250 °F, with the possibility of emitting toxic gases and flammable vapors.

Application

The surface to be bonded must be free of dust, grease, oil and water, using isopropyl alcohol as a cleaner on both sides, if the surface has rust there will be a need to sand. Higher adhesion performance is obtained on substrates that have been lightly sanded. Adhesive bond strength depends on the amount of surface area that comes in direct contact with the adhesive.

Purge the adhesive cartridge before and after placing the mixing nozzle, remove some of the adhesive already mixed with the nozzle, this is to ensure that properly mixed adhesive is applied to the parts to be bonded.

The product is best used at temperatures between 64 and 79 °F. Temperatures below 64°C will reduce the cure speed and viscosities will be higher. Temperatures above 80 °F will cause the material to dry faster and its viscosity will be lower. For consistent dosing keep the temperature in the above mentioned range. For optimum adhesion and to ensure maximum performance, keep parts together within the specified working time of the adhesive.

Ensure that the assembly has uniform coverage and a sufficient amount of adhesive. It is important to apply the adhesive when the parts are aligned and positioned, they can be adjusted within the working times established for the product. To ensure maximum performance of the assembly, it should remain at rest until the set time is reached. It is recommended that excess be wiped off before the adhesive has cured.

Glossary

1) Open time. It is defined as the time available to perform the assembly counted from the moment the adhesive is mixed.

2) Working time. It is defined as the approximate time that the assembled parts must be left without movement for the adhesive to achieve sufficient bond strength to move the assembly carefully and/or remove the clamping tools.

3) Electrostatic Powder Coating. Acoating method in which a powder paint is applied to a surface by means of an electric charge.

4) Elongation. This parameter measures the ability of an adhesive to stretch before fracturing, which is vital to its performance in various applications.

5) Cohesive failure. Occurs when failure occurs within the adhesive itself, rather than at the adhesive-substrate interface. adhesive itself, rather than at the interface between the adhesive and the substrate. means that the adhesive has bonded properly to both surfaces, but the force applied is so great that it breaks the adhesive itself.

6) Substrate failure. Occurs when the failure occurs within the substrate material rather than the adhesive. substrate material rather than the adhesive. This type of failure indicates that the adhesion adhesion between the adhesive and the substrate is so strong that the substrate itself breaks before the adhesive breaks before the adhesive peels off.

Storage

Shelf life of M305 is 9 months from date of shipment. Shelf life is based on products that are properly stored at temperatures between 55 and 77 °F. Exposure to temperatures above 77°F will reduce the shelf life of the product. This adhesive should NEVER be frozen.

Features & Benefits

- No need for surface preparation.
- Excellent resistance.
- Impact resistant..
- Dries at room temperature.
- Easy to apply.

Note: The data is provided for informational purposes only and according to the studies carried out, the data shown here is obtained by following the application instructions and under optimal product conditions. We cannot take responsibility for the results obtained by others whose methods we do not control. It is recommended that the product be tested in the application for which it is to be used. For more information about this or any other product, contact our technical area at info@adinoxadhesives.com It is important to properly follow the instructions for use specified on the label.