TECHNICAL DATA SHEET
Altraset® 552
Dual Cure
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METLOK PRIVATE LIMITED
(An ISO 9001 Certified Company)
W-27, M.I.D.C. Industrial Area
Kalmeshwar – 441 501, Nagpur

Product Description

Altraset® 552 is a dual cure adhesive used to bond, coat and seals glass to glass, glass to metal components. The product is solvent free and cures when exposed to most types of ultraviolet lights ranging from low intensity black lights to high intensity mercury vapor lamps/ bulbs or heat. When cured, it is highly resistant to vibration and impact forces.

Applications:

- In precision optical instruments, decorative components, furniture,
- Unitizing electric appliances and devices.
- Suitable for bonding a wide range of materials.
- Potting and tacking applications.

Properties

Technology	:	Acrylic
Chemical Type	:	Modified acrylic ester
Component	:	One part
Appearance	:	Transparent/light yellow
Specific Gravity@ 25 °C	:	1.06
Viscosity @ 25 ±2°C, Brookfield DV II + Pro Spindle no. 6, Speed 20 r.p.m.	:	7000 to 10000 cP
Cure	:	UV Light
Secondary Cure	:	Heat or Activator
Operating temperature	:	-30 °C to 150°C
Applications	:	Bond, Coat or Seal
Key substrate	:	Glass, metals

Curing Performance

Altraset® 552 cures when exposed to UV radiation of 365 nm. To obtain a full cure on surfaces exposed to air; radiation at 250 nm is also required. The speed of cure will depend on the UV intensity as measured at the product surface. If being used to bond parts together, UV light must be able to pass through one of the parts to reach the adhesive. Cure rate and ultimate depth of cure depend on light intensity, spectral distribution of the light source, exposure time, bondline gap, geometry and light transmittance of the substrate through which the light must pass.

Heat Cure

Altraset® 552 cured with heat. The bond area should be heated to 120°C and maintained at that temperature for 30 minutes.

Activator Cure

Altraset® 552 cured with an activator. Apply Activator 1007 to one surface and the adhesive to the other, mate and clamp. The assembly will reach handling strength in approximately 5-10 minutes if the gap is small, full cure in 60-72 hours

Fixture Time

Fixture time is defined as the time to develop shear strength of 0.1 N/mm².
UV Fixture Time, 100 mW/cm² using a mercury light source

Glass to Glass	:	8-10 Seconds
Aluminium to Glass	:	10-15 Seconds
Steel to Glass	:	10-12 Seconds

Properties of Material

Physical Properties

3 mm thick material cured @ 100 mW/cm² @ 365 nm for 30 seconds using a UV light source plus 24 hrs @ 25°C

Water Absorption	:	6.7 %
Glass Transition Temperature, ASTM D 3418	:	56.03 °C
Refractive Index, ASTM 542	:	1.48
Durometer Hardness , Shore D ASTM D-2240	:	35-45
Elongation, at break, ASTM D 882	:	≥ 165 %

Electrical Properties

Dielectric Breakdown Strength, ASTM D 149	:	21.4 kV/mm
Dielectric Constant / Dissipation ASTM D150; 1-kHz	:	5.5/0.01
Volume Resistivity, ASTM D257	:	6.65×10^{11} Ω-cm
Surface resistivity, ASTM D257	:	2.96×10^{9} Ω

Adhesive Properties of Cured Material

Cured @ 120 °C for 30 minutes;
Lap Shear Strength, ASTM 1002

Steel to Steel	:	15-27 N/mm²
Aluminium to Aluminium	:	10-20 N/mm²

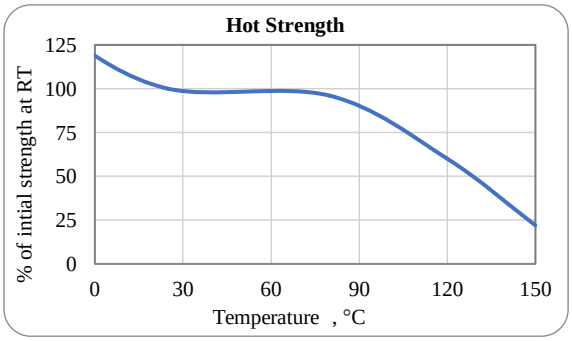
Cured @ 120 °C for 30 minutes;
Tensile Strength, ASTM 897

Steel to Steel	:	13-20 N/mm²
Aluminium to Aluminium	:	9-20 N/mm²

Hot Strength

Test	:	Lap Shear Strength, ASTM D1002
Substrate	:	Steel
Cure	:	30 minutes@120 °C

Tested at temperature indicated.



Chemical/Solvent Resistance

3 mm thick material cured @ 100 mW/cm² @ 365 nm for 30 seconds using a UV light source plus 24 hrs @ 25°C

Environment	Temp, °C	% of initial strength after 2hrs.
Engine Oil	25±2	100
Gear Oil	25±2	100

Directions for Use

- Altraset® 552 is light sensitive; exposure to daylight, UV light and artificial lighting should be kept to a minimum during storage and handling.
- Altraset® 552 should be dispensed from applicators with black feedlines.
- For best performance bond surfaces should be clean and free from grease.
- Cure rate is dependent on lamp intensity, distance from light source, depth of cure needed or bondline gap and light transmittance of the substrate through which the radiation must pass.
- For dry curing of exposed surfaces, higher intensity UV is required.
- Cooling should be provided for temperature sensitive substrates such as thermoplastics.
- Plastic grades should be checked for risk of stress cracking when exposed to liquid adhesive.
- Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
- Handling Bond strength should be allowed to develop before subjecting to any service loads.

Handling

- Altraset® 552 must be handled in compliance with relevant local regulations.
- Altraset® 552 can affect certain plastics or coatings. It is recommended to check all surfaces for compatibility before use.

Storage

- Store Altraset® 552 in a cool and dry location in unopened containers at a temperature between 10°C to 20°C unless otherwise labeled. Optimal storage is at the lower half of this temperature range.
- Altraset® 552 will exhibit a shelf life of 6 months from the date of manufacture when stored as mentioned above.
- To prevent contamination of unused product, do not return any material to its original container. For further specific shelf life information, contact our technical service Center.

Note

All statements, technical information and recommendations set forth herein are based on tests which Metlok Private Limited, believes to be reliable. However, Metlok Private Limited does not guarantee their accuracy or completeness. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In no case will Metlok Private Limited be liable for direct, consequential economic or other damages.

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