



TECHNICAL

PRODUCT DESCRIPTION

Chemence AR-01 is a single component, general purpose, anaerobic retaining compound.

AR-01 cures when confined in the absence of air between close-fitting metal surfaces.

TYPICAL APPLICATIONS

Chemence AR-01 is formulated for bonding cylindrical parts, to give high strength bonds. Typical applications include bonding gears on to shafts. AR-01 is designed to augment the strength of interference fit and press fit assemblies. Once applied, parts slip together easily, lubricated by the adhesive. AR-01 prevents corrosion of assembled parts

PROPERTIES OF MATERIAL

	Value
Chemical type	Dimethacrylate
Appearance	Green
Specific Gravity	~1.07
Viscosity ¹ cPs	(Range) 100 – 150 (Typical Value) 125
Breakaway Torque ² N/m	Range 25 - 41 Typical 32
Prevail Torque ² N/m	Range 25 - 40 Typical 34
Shear Strength ³ N/mm ²	Range 15 - 28 Typical 21
Initial Fixture Time ⁴ (mins)	15
Full Cure (Hrs)	24
Flash Point (°C)	> 100
Max Gap Fill (mm)	0.2
Shelf Life @ 20°C (Months)	12
Temp Range °C	Continuous -50 to +150

¹ Brookfield LVF spindle 2, 2.5rpm
² On M10 black oxide steel bolt and M10 bright steel nut, ISO 10964
³ On mild steel pin and collar, ISO10123
⁴ ISO 10964

CHEMICAL / SOLVENT RESISTANCE

Chemence anaerobics exhibit excellent chemical resistance to most oils and solvents including motor oil, leaded petrol, brake fluid, acetone, ethanol, propanol and water. Anaerobic adhesives and sealants are not recommended for use in pure oxygen or chlorine lines.

TYPICAL ENVIRONMENTAL RESISTANCE

Hot strength

Chemence AR-01 is suitable for use at temperatures up to 150°C. At 130°C the bond strength will be ~40% of the strength at 21°C

Heat ageing

Chemence AR-01 retains over 90% full strength when heated to 100°C for 90 days then cooled and tested at 21°C.

STORAGE

Optimal storage conditions are between 8°C and 21°C. Storage outside this temperature range can adversely affect product properties and may affect the stated shelf life.

CURE SPEED VS. TEMPERATURE

All figures relating to cure speed are tested at 21°C. Lower temperatures will result in slower cure. Heating the assembled parts accelerates the curing process.

Activator LA-64 should be used when the temperature is less than 5°C.

CURE SPEED VS. SUBSTRATE

Cure speed and strength vary according to the substrates. When used on mild steel and brass components anaerobic adhesives will reach full strength more rapidly than more inert materials such as stainless steel and zinc dichromate

Chemence LA-64 activator may be used to accelerate cure speed.

Anaerobic adhesives only cure in the absence of air and with metal part activation.

CURE SPEED VS. ACTIVATOR

Where speed of cure is too slow or the bond gap is very large, Chemence LA-64 Anaerobic Activator may be used to accelerate cure speed. The use of an accelerator may reduce bond strength by up to 30%.

Chemence recommends testing on the parts to measure the effect.

CURE SPEED VS. BOND GAP

The size of the bond gap greatly affects the speed of cure of anaerobic adhesives. The larger the gap between surfaces, the slower the cure speed. Maximum recommended gap for AR-01 is 0.2mm, which will give approximately the cure schedule as detailed in the properties table.

CURING PERFORMANCE

Typical curing speed⁴ as % of final strength

20 mins	~10% strength
1 hours	~50% strength
24 hours	100% strength

DIRECTIONS FOR USE

AR-01 is suitable for high strength retaining applications that require small gap filling.

Ensure parts are clean, dry and free from oil and grease.

Apply adhesive to all the engaged area. Assemble parts and allow to cure. Wipe excess adhesive from outside of joint.

Product is normally hand applied from the bottle or tube. Dispensing systems are available for high volume assembly applications. Please contact your Chemence representative for further advice on dispensing solutions.

PRESENTATION

Bottles: 10ml, 50ml and 250ml.

Available in bulk for use with dispensing systems.

Please Note: When packed an air space above the product is vital to maintain stability.

GENERAL INFORMATION

For safe handling of this product consult the Material Safety Data Sheet. **Important:** Product packed in bulk ($\geq 5\text{kg}$) has a shelf life of 6 months. The material must be filled into smaller bottles/tubes within this time period.

DATA RANGES

The data contained in this data sheet may be reported as typical value and/or range. Values are based on actual test data and are verified on a regular basis

LIMITATIONS

AR-01 is not recommended on certain plastics as stress cracking can sometimes result. Some anti corrosion chemicals inhibit the cure system in this type of anaerobic.

Trials are recommended to establish whether cleaning of the parts is necessary.

LA-64 Activator may be required on plated parts.

NOTES

The information contained herein is produced in good faith and is believed to be reliable but is for guidance only. Chemence Ltd. and its agents cannot assume liability or responsibility for results obtained in the use of its product by persons whose methods are outside or beyond our control. It is the user's responsibility to determine the suitability of any of the products and methods of use or preparation prior to use mentioned in our literature and furthermore the user's responsibility to observe and adapt such precautions as may be advisable for the protection of personnel and property in the handling and use of any of our products.