



TECHNICAL

PRODUCT DESCRIPTION

Chemence AT-43 Nut-lock is a general purpose, medium-high strength, thixotropic anaerobic thread locking compound. The product cures when confined in the absence of air on close-fitting metal surfaces.

TYPICAL APPLICATIONS

Chemence AT-43 is formulated to lock all metric and imperial nuts and bolts, preventing vibration loosening and leakage through the threads. AT-43 is slightly oil tolerant, so it will bond some 'as received' parts, but best results are obtained with clean substrates. The thixotropic nature of the product prevents run off, dripping and migration after assembly. AT-43 is typically used on mounting bolts, housing screws, etc. AT-43 will help prevent the corrosion of assembled parts.

PROPERTIES OF MATERIAL

	Value
Chemical type	Dimethacrylate
Appearance	Blue
Specific Gravity	~1.04
Viscosity ¹ cPs	(Range) 10,000 – 18,000 (Typical Value) 14,000
Viscosity ² cPs	(Range) 2,500 – 4,000 (Typical Value) 3,300
Breakaway Torque ³ N/m	Range 12 - 25 Typical 19
Prevail Torque ³ N/m	Range 5 - 15 Typical 10
Initial Fixture Time ⁴	(mins) ≤15
Full Cure	(Hrs) 24
Flash Point	(°C) > 100
Max Gap Fill	(mm) 0.30
Shelf Life @ 21°C	(Months) 12
Temp Range °C	Continuous -50 to +150

- ¹ Brookfield RVT spindle 3, 2.5rpm
- ² Brookfield RVT spindle 3, 20rpm
- ³ On M10 black oxide steel bolt and M10 bright steel nut, ISO 10964
- 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 AT-43 is suitable for use at temperatures up to 150°C. At 130°C the bond strength will be ~30% of the strength at 21°C

Heat ageing

Chemence AT-43 retains ~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 AT-43 is 0.30mm, which will give approximately the cure schedule as detailed in the properties table.

CURING PERFORMANCE

Typical curing speed⁴ as % of final strength

15 mins	Finger Tight
1 hour	~60% strength
24 hours	100% strength

DIRECTIONS FOR USE

AT-43 is suitable for medium-high strength retaining applications that require small to medium 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.

LIMITATIONS

AT-43 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.

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

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.