



PRODUCT DESCRIPTION

Chemence AP-77 is a single component, low-medium strength, anaerobic pipe sealant.

AP-77 is a very high viscosity, thixotropic pipe sealing paste possessing high lubricity. AP-77 cures when confined in the absence of air between close-fitting metal surfaces.

TYPICAL APPLICATIONS

Chemence AP-77 is formulated to lock and seal medium to coarse straight and tapered pipe threads on pipes of diameter from 15mm to 80mm. AP-77 prevents vibration loosening and leakage through the pipe threads. AP-77 is formulated to give medium strength break torque, but lower prevail torque on assembled joints, thus enabling easier disassembly and servicing. Pipe joints made with AP-77 should be tightened to the specified torque within a maximum of 15 minutes from initial assembly. AP-77 will give an almost instant low-pressure seal (up to 2 Bar after 20mins.) and when fully cured will seal up to the bursting pressure of the pipe (e.g. 10,000psi).

PROPERTIES OF MATERIAL

	Value
Chemical type	Dimethacrylate
Appearance	Fluorescent yellow
Specific Gravity	1.12
Viscosity ¹ cPs	(Range) 35,000 – 60,000 (Typical Value) 48,000
Viscosity ² cPs	(Range) 10,000 – 20,000 (Typical Value) 15,000
Breakaway Torque ³	N/m Range 8 – 20 Typical 16
Prevail Torque ³	N/m Range 2 – 8 Typical 4.5
Initial Fixture Time ⁴	(mins) 15
Full Cure	(Hrs) 24
Flash Point	(°C) > 100
Max Gap Fill	(mm) 0.25
Shelf Life @ 20°C	(Months) 12
Temp Range °C	Continuous -50 to +150

¹ Brookfield RVT spindle 5, 2.5rpm
² Brookfield RVT spindle 5, 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.

CURING PERFORMANCE

Typical curing speed⁴ as % of final strength

15 mins	Finger Tight
1 hours	~40% strength
24 hours	100% strength

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 components anaerobic gasket adhesives will reach full strength more rapidly than on more inert materials such as aluminium and stainless steel.

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 the mating surfaces, the slower the cure speed. Maximum recommended gap for AP-77 is 0.25mm.

DIRECTIONS FOR USE

AP-77 is suitable for most straight and tapered pipe threads of medium to coarse pitch, from Ø15mm to Ø80mm pipe. AP-77 will not cure outside the joint and is virtually non-fouling in most types of pipe systems.

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

Apply adhesive to all engaged threads, although to minimise excess adhesive inside the joint, apply adhesive only to the male part, leaving the first two threads clear. Assemble parts and allow to cure. Wipe excess adhesive from outside of joint.

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

TYPICAL ENVIRONMENTAL RESISTANCE

Hot strength

Chemence AP-77 is suitable for use at temperatures up to 150°C. At 130°C the bond strength will be ~20% of the strength at 21°C.

Heat ageing

Chemence AP-77 retains ~85% full strength when heated to 100°C for 90 days then cooled and tested at 21°C.

TECHNICAL

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.

PRESENTATION

Tubes: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.

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.

GENERAL INFORMATION

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

LIMITATIONS

AP-77 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.