



PRODUCT BULLETIN

LONG LIFE CONCENTRATED COOLANT



Nulon Long Life Concentrated Coolant (LL) offers long-term cooling system protection for all motor vehicles. Nulon LL is based on Hybrid Additive Technology (HAT), which is a blend of organic and inorganic additives. The advantage of this product over conventional ethylene glycol type coolants is that the corrosion-inhibiting package has minimal depletion over an extended period of time. This means that maximum corrosion and anti-freeze/anti-boil protection are maintained until the fluid is replaced at the recommended 250,000 kilometres or four years (whichever comes first).

Nulon LL Concentrated Coolant is to be used at 33% to 50% by volume in soft or demineralised water. Nulon LL protects for four years or 250,000 km and is safe to use in all Commodores & Ford Falcons (including V series and AU & BA).

Nulon LL is a low-silicate formulation containing no nitrite, phosphate or amine. These chemicals are often used in conventional coolants and have limitations in performance, protection afforded, and vehicles to which they are suited. Nulon LL is guaranteed suitable for use in all vehicles where the manufacturer specifies anti-boil/anti-freeze coolant.

Nulon LL meets the specified requirement (HN2217) of General Motors Holden for use in all Australian-manufactured four-cylinder vehicles. HN2217 is the specification recommended by GMH for all warranty servicing of Australian built and imported (Opel) 4-cylinder vehicles.

Nulon LL's formulation is approved by Ford Australia (ESE-M97B44-A specification) for initial fill in all Australian-manufactured 6 and 8 cylinder vehicles. This specification is recommended by Ford for all in-warranty and post-warranty servicing of Ford vehicles where a glycol-based coolant is required.

Applications:

Nulon LL is recommended for the protection of cooling systems of all petrol engines as well as heavy and light duty diesel engines operating in on-road, off-road, or stationary conditions. LL provides maximum protection against cavitation erosion of wet cylinder liners in diesel engines. Refer to Nulon Fact Sheet No. 108 for more information regarding diesel engine applications. For maximum protection, particularly in heavy-duty applications, use LL at 50% volume with clean, soft or demineralised water.

Guaranteed to be suitable for the protection of cooling systems of all passenger vehicles where an anti-boil/anti-freeze coolant is specified. Nulon Long Life

Concentrated Coolant is also suitable for older vehicles where a broader cooling system operating temperature range is required, or as a replacement for conventional corrosion inhibitors.

Note: Where a manufacturer specifies Organic Acid Technology (OAT) long life coolant, use either of Nulon's Red Long Life Coolants.

Benefits:

- 4 years or 250,000 km service life (whichever comes first)
- Guaranteed to suit every vehicle
- Provides optimum protection against corrosion of all metals in vehicle cooling systems
- Compatible with hoses and rubber fittings
- Expands operating temperature range of cooling systems (see details below)
- Eliminates the need for supplemental coolant additives (SCA) in diesel engines
- Reduces the incidence of nucleate or hot spot boiling
- Not aggressive to water pump seals as is often the case with silicate-based coolants
- Performance of organic acid-based inhibitors does not diminish with time
- Reduces inventory for fleet operators

Specifications and Standards:

Nulon LL Concentrated Coolant satisfies the performance requirements of the following standards and specifications.

ASTM D 3306	ASTM D 2809 Cavitation Erosion Test	GMH HN2043 HN2217
ASTM D 4985 (heavy duty engines)	ASTM D 4340 Heat Rejection Corrosion Test	Ford ESE-FM97B18-C ESE-M97B44-A ESE-M97B44-A
ASTM D 4656	ASTM D 2570 Simulated Service Corrosion Test	Volvo (UK)
SAE J 1034	MWN Diesel D234 2/15	Nissan NES 5059 LLC
AS/NZS 2108.1:1997 Type A	Mazda MES MN 1210	Caterpillar 1 EO 535
AS 2108.84	BMW (UK)	Detroit Diesel Allison 7SE298
BS 6580	Saab FSD 8074	Cummins 92 T8-9
JIS K 2234	General Motors GM 1825M / 1889M	Mercedes Benz DBL 7700
ASTM D 1384 Glassware Corrosion Test	GME L1301	Toyota K2601G-1G



Physical Properties:

Property	Nulon LL
Density (g/ml at 20°C)	1.135
Freezing point 50 v/v: solution, °C	-37
Boiling point (undiluted) (°C)	176
Boiling point (50%v/v) (°C)	109 Unpressurised
pH (50% v/v)	7.6
Reserve alkalinity (ml)	17
Flash point (open cup °C)	118
Chloride, ppm	<10
Foaming: Volume/(mls) Break Time/ (seconds)	45 max 2 max
Shelf life	3 years
Colour	Green
Odour	Characteristic
Glycol content (grams p/litre)	1060

Mix ratio	Makes	Boils at	Freezes at
33.3%	1 litre makes 3 litres	127°C	-18°C
50%	1 litre makes 2 litres	132°C	-37°C

Glassware Corrosion Test (ASTM D 1384)

Metal	*AS/NZS 2108.1:1997	*ASTM D 3306	Result for Nulon LL
Copper	10	10	1
Solder	15	30	1
Brass	10	10	0
Steel	10	10	1
Cast iron	10	10	2
Aluminium	15	30	1

* Maximum allowed weight loss (mg)

Corrosion of Cast Aluminium Alloys at Heat Rejecting Surfaces (ASTM D 3430)

Metal	*AS/NZS 2108.1:1997	*ASTM D 3306	Result for Nulon LL
Aluminium	1.0 max	1.0 max	0.17

*Llimit (mg/cm²/week)

Water Pump Cavitation Erosion Test (ASTM D 2809)

Metal	GM 1825M (rating)	ASTM D 3306 (rating)	Result for Nulon LL
Aluminium	8 min	8 min	9

Packaging:

- 1 litre (12 per pack) * Part No: LL1
- 2.5 litre (6 per pack) * Part No: LL2.5
- 5 litre (3 per pack) * Part No: LL5
- 20 litre (single units) * Part No: LL20
- 205 litre (single units) * Part No: LL205

Recommended step-by-step guide for changing all concentrated coolants.

- 1) Before proceeding, read your owner's manual as some vehicles may have special requirements.
- 2) Check that all hose connections are tight. Also check the condition of all hoses, fittings and belts.
- 3) Use Nulon Radiator Flush and Clean (R40) to make sure that the radiator and engine are as clean as possible. This ensures maximum coolant life.
- 4) R40 should be added to the old coolant. With the heater on, run the engine or drive, for 20 minutes minimum, 1 hour maximum.
- 5) Stop the engine and allow it to cool. Remove the bottom radiator hose or drain plug to drain out all the old coolant. It is important to rinse out all traces of old coolant from the engine block and heater circuit. To best achieve this, refill the system with clean water – run the engine up to operating temperature and when it is cool drain and flush again. This will ensure a clean environment for the new coolant.
- 6) Check the cooling system capacity of the vehicle and add the required dose of Nulon Concentrated Coolant (do not pre-mix), then fill with soft clean or demineralised water. Any leftover product can be pre-diluted and used as a top-up.
- 7) Some vehicles may require "air bleeding" to remove trapped air from the heater circuit and cylinder head. An air bleeding screw is located on the engine of some vehicles for this purpose. If you are unsure about this procedure please seek further advice before proceeding. Removing the return heater hose from the water pump to establish water flow, whilst topping up, will assist in reducing "air locks". Note: air locks can cause severe engine damage.
- 8) Start the engine and monitor coolant level and temperature until the thermostat opens and the vehicle reaches operating temperature.
- 9) When the vehicle cools down re-check the coolant level.

Note: This check sheet should be used as a guide only. Some vehicles may have special requirements that are not noted above. We strongly advise that you read your owner's manual or relevant workshop manual before proceeding with a coolant change.

First Aid Directions:

If poisoning occurs, contact a doctor or Poisons Information Centre (Ph: Australia 131 126; New Zealand 0800 764 766). If swallowed and more than 15 minutes from hospital, induce vomiting, preferably using ipecac syrup (a.p.f). Not to be used as a food container.



FREQUENTLY ASKED QUESTIONS

Q) Is Long Life Concentrated Coolant safe to use in all cars and trucks?

Long Life coolant is safe to use in all cars as well as trucks and heavy-duty diesel engines. Long Life contains no phosphates and is therefore suitable for all European and Japanese vehicles. In fact, Nulon guarantees Long Life to be suitable for all engines.

Q) Is Long Life Concentrated Coolant a full-strength glycol concentrate?

Yes, Long Life is a full-strength glycol concentrate. It should be used at a ratio between 33% and 60%.

Q) What is the maximum concentration I can use?

A 50% mix is the most beneficial. Do not go over 60%.

Q) Can I mix LL with other coolant?

Never mix coolants or inhibitors as they may contain conflicting formulations and possibly have a reaction.

Q) Why can LL last for four years or 250,000 km?

Long Life is a Hybrid Acid Technology long life coolant. It remains very stable during its service life – unlike conventional coolants that deplete over time.

Q) Can I use LL in place of a red coolant?

Yes. Providing the old red coolant is flushed out and the cooling system rinsed, it is safe to switch to Nulon Long Life Concentrated Coolant.

Q) Do I need to use Cooling System Flush and Clean every time I do a coolant change?

Radiator manufacturers always recommend the use of an alkaline radiator cleaner. Even in a clean cooling system it will help neutralise harmful acids and minimise the risk of cross-contaminating the new coolant.

Q) What is the best way to dispose of old coolant?

The EPA issue guidelines for the best way to dispose of used coolant.

Q) How can I check for stray current in a cooling system?

This topic is covered in Nulon Fact Sheet, number 119.

Q) I noticed a leak after changing coolant – but it wasn't there before. What has caused this?

Glycol is used in most modern coolants. It is very searching and may make an existing leak more evident. The bright green dye in coolants – and the fact that glycol takes a long time to dry out – can also show up a minor leak. Before changing coolant it is very important to check for existing leaks and to check or replace all hoses. Pressure testing the system prior to draining the coolant is also advisable.

Q) Can I use LL in Commodores?

Yes, Long Life coolant is highly recommended for Commodores and will give superior corrosion protection compared to HN2043 specification coolants. You might be interested to know that the HN2043 formulation was developed way back in 1975. A hybrid technology coolant, very similar to Nulon LL, is used in all 6-cylinder Commodores that are exported.

Q) Can I use LL in cars – like Porsche – that need to use coolant with no phosphates?

Nulon Long Life Coolant is a very high quality coolant that is safe to use in all types of cars and trucks. It is a low-silicate formula that contains no phosphates, amines or nitrates.

Q) In a Commodore, should I add stop leak/lubrication pellets to Nulon Long Life Concentrated Coolant?

These pellets are recommended in high-silicate/highly abrasive coolants. They help reduce water pump seal wear and plug up any leaks. It should not be necessary to use these pellets in Nulon Long Life Coolant as it is a low-silicate formulation. If pellets have been used previously in a Commodore, and a leak becomes evident after changing coolant, they should be added.

Nulon is 100% Australian made and owned and very proudly exported to over 20 countries.