



PRODUCT BULLETIN

▪ RED CONCENTRATED LONG LIFE COOLANT



Nulon Red Concentrated Long Life Coolant (RLL) provides the ultimate anti-boil, anti-freeze and corrosion protection for all late model vehicles, including petrol, diesel and heavy-duty diesel applications. RLL incorporates the most up-to-date Organic Acid Technology (OAT) carboxylate corrosion inhibitors. RLL is nitrite and amine free to meet US requirements, phosphate free to meet European requirements and silicate free to meet Japanese requirements. Nulon RLL's carboxylate inhibitor package is more stable and stays in solution better than traditional coolants. This provides an extended shelf life of five years. Nulon RLL will not form solids inside cooling systems, or become abrasive to water pump seals. All of this means that RLL provides maximum corrosion and anti-freeze, anti-boil protection for up to five years or 250,000 km (whichever comes first).

Nulon RLL is the preferred coolant to use in cooling systems fitted with aluminium radiators. It is a genuine 100% OAT based, long life coolant. RLL is dyed its distinct red/orange colour to instantly distinguish its unique chemistry from traditional green coolants. It should not be mixed with other coolants. As it is a concentrated coolant, it is to be used at 33% to 50% by volume in soft or demineralised water. Nulon RLL provides maximum protection against cavitation erosion of wet cylinder liners in diesel engines. Nulon RLL is particularly suited to vehicles fitted with aluminium radiators. If changing from any other coolant to RLL, always thoroughly flush the system first as cross contamination will reduce the life of RLL.

Applications:

Nulon RLL is recommended for use in all vehicles that use a red or orange coloured coolant. Nulon RLL is principally designed for use where OAT coolant is required. It is particularly suited for use where AS/NZS 2108.1:1997 Type A, GM6277M or Toyota TSK2601G specifications are cited. Use in all cooling systems as a replacement for any red/orange coloured coolant. Among specific makes of vehicles that use red/orange coolant are: Ford Falcon EA – EF, Holden Gen 3 & Gen 4 V8's and Alloytech V6, all Toyota models, Audi (some models), VW (some models), Jeep (most models), Chrysler (most new imports have red), Isuzu trucks, Daihatsu cars and trucks and Caterpillar.

Benefits:

- 5 years or 250,000 km service life (whichever comes first) when used as directed
- Guaranteed to suit every vehicle where red/orange OAT based coolant has been specified
- Provides optimum, long-term protection against corrosion of all cooling system metals
- 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 nucleate, or hot spot boiling
- Not aggressive to water pump seals as is often the case with silicate based coolants
- Performance does not diminish with time
- Particularly effective is controlling cavitation erosion of wet cylinder liners in diesel engines

Packaging:

- 2.5 litre (6 per pack) * Part No: RLL2.5
- 5 litre (3 per pack) * Part No: RLL5
- 20 litre (single units) * Part No: RLL20

Specifications and Standards:

Nulon RLL coolant satisfies the requirements of the following standards and specifications.

ASTM D 3306	ASTM D 2809 Cavitation Erosion Test	Mazda MES MN 121D
ASTM D 4985	ASTM D 4340 Heat Rejection Corrosion Test	Mitsubishi ES-X64217
ASTM D 4656	ASTM D 2570 Simulated Service Corrosion Test	Volvo (UK)
SAE J 1034	AS 2108.84	Nissan NES M 5509
AS/NZS 2108.1:1997 Type A	Ford ESE-M97B44-A ESE-FM97B18-C WSS-M97B44-D	General Motors GM 1825M GM 6277M GM 1899M
ASTM D 5345	Toyota TSK 2601G	Saab FSD 8074
BS 6580		BMW (UK)
JIS K 2234	ASTM D 1384 Glassware Corrosion Test	Daimler Chrysler MS-7170 MS-976



Physical Properties:

Property	Nulon R LL
Density (g/ml at 20°C)	1.117
Freezing Point (50 v/v in water) (°C)	-37
Boiling Point (undiluted) (°C)	>160
Boiling Point (50%v/v in water) (°C)	130
Reserve Alkalinity (ml)	5
Glycol content (grams per litre)	1060
pH (50% v/v in water)	8.5
Foaming Height (ml)	45 max
Break Time (seconds)	2
Colour	Red/orange
Chloride Ion (mg/L)	<25
Coolant hose test (SAE J20)	Pass

Temperature protection chart (Using 105 kPa radiator cap)			
Mix ratio	Makes	Boils at	Freezes at
33.3%	1 litre makes 3 litres	127°C	-18°C
50%	1 litre makes 2 litres	130°C	-37°C

Glassware Corrosion Test (ASTM D 1384)

Metal	*AS/NZS 2108.1:1997	Typical result for Nulon RLL
Copper	10	2
Solder	15	+2
Brass	10	2
Steel	10	+1
Cast iron	10	+3
Cast aluminium	15	4

* Maximum allowable weight loss (mg)

Simulated Service Test (ASTM D 2570)

Metal	AS/NZS 2108.1:1997 limit (mg/cm ² /week)	Typical result for Nulon RLL
Copper	20 (max wt loss)	5
Solder	60	+1 (gain)
Brass	20	4
Steel	20	1
Cast iron	20	+2 (gain)
Aluminium	60	1

Water Pump Cavitation Erosion Test (ASTM D 2809)

Metal	GM 1825M (rating)	ASTM D 3306 (rating)	Typical result for Nulon RLL
Cast aluminium	8 min	8 min	9

Aluminium Heat Rejection Corrosion Test (ASTM D 4340)

Nulon RLL Corrosion rate (mg/cm ² /week)	AS/NZS 21008.1:1997 (max allowable rate, mg/cm ² /week)
0	1.0

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 ensure 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 turned 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 Red Concentrated Long Life 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.



FREQUENTLY ASKED QUESTIONS

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

RLL coolant is safe to use in all car, truck and heavy-duty diesel engines for which a long life red OAT coolant is specified. RLL can be safely used in all vehicles that are fitted with aluminium radiators. RLL is phosphate, amine, borate, silicate and nitrate free and is therefore suitable for all European and Japanese vehicles. (For cooling systems fitted with a brass radiator, use Nulon Concentrated Long Life Coolant, which is green.)

Q) Is Nulon Red Concentrated Long Life 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 RLL with other coolant?

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

Q) Why can RLL last for five years or 250,000 km?

Nulon RLL uses Organic Acid Technology (OAT) inhibitors which deplete very slowly. RLL remains very stable both in service and in storage unlike conventional coolants.

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 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 RLL in Holden Commodores?

Nulon RLL exactly meets the coolant requirement for the Gen III V8 and Alloytech V6 and V8 Commodores. For all other Commodores we recommend Nulon Long Life Concentrate (green).

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

Nulon RLL contains no phosphates, which makes it particularly suitable for Porsches as well as most other European vehicles.

Nulon is 100% Australian made and owned and is very proudly exported.