

Yellow Fluorescent UV Dye for Air Conditioning or Refrigeration Systems

Description



BRILLIANT is the yellow UV fluorescent dye developed by Errecom's chemical laboratory for air conditioning and refrigeration systems. Its formulation makes it compatible with all refrigerant gases and refrigeration lubricants used in both the Automotive and HVAC/R sectors. Thanks to its high fluorescence, it allows for the quick and precise detection of refrigerant gas leaks. Fluorescent dyes are universally used for locating leaks in AC/R systems; however, even today, many products on the market contain solvents, even though their presence in the system damages AC/R units. These solvents are added to dye formulations to facilitate the dissolution of chromophore pigments in the lubricant. While this may make the dye easier to homogenise during mixing, it has extremely negative consequences for the AC/R system. The presence of solvents compromises the viscosity of the lubricant to which the solvent-based dye is added, potentially causing permanent damage to the compressor. As these solvents continue to circulate through the system, they eventually damage key materials – aluminium, plastic, and rubber – which make up the circuits and charging and recovery stations.

BRILLIANT, like all Errecom dyes, is solvent-free and, therefore, is non-toxic and safe for all AC/R system components.

Field of Application

- HVAC/R
- Automotive

Features

- Compatible with all refrigerant gases, including CFC, HFC, HCFC, HFO, CO₂, and Hydrocarbons (including R12, R134a, R1234yf, R407c, R22).
- Optimised for next-generation refrigerant gases.
- Compatible with all refrigeration lubricants.
- Compatible with electric compressors.
- Precisely locates refrigerant gas leaks.
- Provides long-lasting results.
- Does not contain toxic or aggressive solvents.
- SAE J2297 and SAE J2298 compliant.
- Does not damage systems or recovery stations.
- Visible when exposed to any UV light.
- Identification labels included in the packaging.

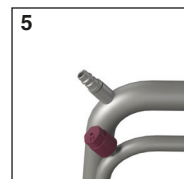
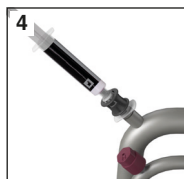
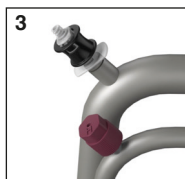
Vehicle A/C System - Application with A/C Recharge Station

Fill up the recharge station bottle with Brilliant.



Vehicle A/C System - Application with Cartridge

1. Start the vehicle's engine.
2. Turn on the air conditioning and set the temperature to the lowest setting.
3. Identify the low-pressure charging valve of the A/C system and connect the adapter.
4. Attach the cartridge to the adapter and inject BRILLIANT into the system.
5. Disconnect the syringe from the system.
6. Inspect the system with a UV lamp. BRILLIANT will immediately highlight the leak.

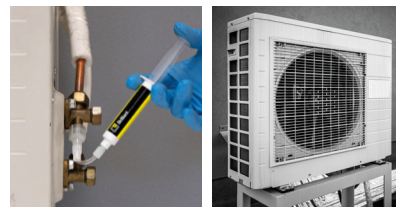


Dosage for Vehicle A/C Systems

7.5 mL (0.25 fl oz) is the dose for systems containing up to 1.5 kg of refrigerant gas.

Air Conditioning and Refrigeration Systems - Application with Cartridge

1. Turn on the air conditioning and set the temperature to the lowest setting.
2. Identify the low-pressure charging valve of the AC/R system and connect the adapter.
3. Attach the cartridge to the adapter and close the valve (pump down).
4. Inject BRILLIANT into the system.
5. Open the valve.
6. Disconnect the cartridge.
7. Wait 15 minutes with the system running for systems with a total pipe length (supply and return) of up to 6 metres. For larger systems, the time increases proportionally to the size of the system.
8. Inspect the system with a UV lamp. BRILLIANT will immediately highlight the leak.



Air Conditioning and Refrigeration Systems - Application with Bottle

Insert Brilliant into the AC/R system following the same procedure as for refrigeration lubricant charging.

Dosage for Air Conditioning and Refrigeration Systems

The dilution ratio is 1:60 – 1 mL per 60 mL of refrigeration lubricant. Use a cartridge (7.5 mL) for up to 0.5 L of refrigeration lubricant.

Adapters for inserting Brilliant into AC/R Systems



Flexible adapter that eases the insertion of the additive into the system if the low-pressure charging port is difficult to reach (always included).

Adapters for Vehicle A/C Systems



Black adapter with quick coupler and safety system to prevent refrigerant gas leakage, to be connected to the low-pressure charging port of vehicle A/C systems operating with R134a.



Green adapter with quick coupler and safety system to prevent refrigerant gas leakage, to be connected to the low-pressure charging port of vehicle A/C systems operating with R1234yf.

Adapters for Air Conditioning and Refrigeration Systems



1/4 SAE adapter (black O-ring) with safety system to prevent refrigerant gas leakage, to be connected to the low-pressure charging port of AC/R systems.



5/16 SAE adapter (green O-ring) with safety system to prevent refrigerant gas leakage, to be connected to the low-pressure charging port of AC/R systems operating with R410a and R32.

Physical and Chemical Properties

Property	Value
Aspect	Liquid
Colour	Fluorescent yellow
Odour	Characteristic
Relative density	0,99 ± 0,005 g/ml (at T = 20°C)

Compliance with Technical Specifications

SAE (Society of Automotive Engineers) is a global organisation responsible for setting technical standards for automotive production, testing, and design. As experts, the SAE identifies and explains SAE International standards, which are then used to promote mobility engineering worldwide. Brilliant has been tested according to SAE standards and complies with the following:

SAE J2297 – Ultraviolet leak detection: stability and compatibility criteria for fluorescent dyes for refrigerant leak detection in automotive air conditioning systems using R-134a and R-1234yf (HFO-1234yf).

SAE J2298 – Ultraviolet leak detection: procedure for using UV dyes for refrigerant leak detection during the servicing of automotive air conditioning systems.

Categorisation and Labelling

This technical specification is only applicable when it comes with the current Safety Data Sheet. In accordance with legal requirements, only the Safety Data Sheet contains current safety information. The MSDS is available on request. The product is not considered hazardous in accordance with Regulation (EC) No. 1272/2008 – CLP.

Safety Instructions

Avoid contact with skin and eyes, inhalation of vapours and mists.

Do not use empty containers before they have been cleaned.

Contaminated clothing must be replaced before entering dining areas. Do not eat or drink while working.

Storage Instructions

Store between + 10 ° C / + 50 ° F e + 30 ° C / + 86 ° F.

Keep the container tightly closed.

To maintain product quality, do not store in warm conditions or direct sunlight.

Do not store above 50 °C.

Keep in a dry and well ventilated place.

Keep away from food, drink and feed.

Transport Conditions

This product is not regulated for transport according to ADR/RID, IMDG, ICAO/IATA.

Shelf Life

5 years from the date of production.

Packaging

Bottle with Dispenser

Art.-Nr.	Description		
TR1A03.01.S1	1 L	06	480
TR1103.01.S1	350 mL	12	1512
TR1003.01.S1	250 mL	12	1680
TR1119.F.S1*	100 mL	12	4680

*available while stocks last

7.5 ml cartridge

Art.-Nr.	Description		
TR1058.A6.01.S2	6 cartridges without adaptors	12	888
TR1058.A6.H1.S2	6 cartridges with R134a adapter	12	888
TR1058.A6.H7.S2	6 cartridges with R1234yf adapter	12	888
TR1058.A6.H2.S2	6 cartridges with R134a + R1234yf adapters	12	888
TR1058.01.S2	12 cartridges without adaptors	12	888
TR1058.H1.S2	12 cartridges with R134a adapter	12	888
TR1058.H7.S2	12 cartridges with R1234yf adapter	12	888
TR1058.H2.S2	12 cartridges with R134a + R1234yf adapters	12	888
TR1068.A12.H4.S2	12 cartridges with 1/4 SAE adapter	12	888
TR1068.A12.H8.S2	12 cartridges with 5/16 SAE adapter	12	888
TR1068.A12.H3.S2	12 cartridges with 1/4 SAE + 5/16 SAE adapters	12	888

60 mL Cartridge

Art.-Nr.	Description		
TR1068.E.01	1 cartridge without adaptors	15	-
TR1068.E.H4	1 cartridge with 1/4 SAE adapter	15	-
TR1068.E.H8	1 cartridge with 5/16 SAE adapter	15	-
TR1068.E.H3	1 cartridge with 1/4 SAE + 5/16 adapters	15	-

Bottle

Art.-Nr.	Description		
TR1003.NT.S1	90 ml	24	-

240 ml Cartridge

Art.-Nr.	Description		
TR1003.DQ.01	240 ml	06	-

REV. 20.01.2025