



CGM CIGIEMME S.p.A.

Controlli Non Distruttivi - Non Destructive Testing



Product Code
02042379

Ref. no.
F3.69/79

**Product Data
Sheet**

ECO WATER FLUOR 1

PRODUCT DESCRIPTION

ECO Water Fluor 1 is a water-washable fluorescent penetrant with a very low environmental impact as it is easily degradable, being free of persistent and bioaccumulative substances. It is part of our ECO line as it contains no petroleum derivatives or hydrocarbon mixtures. It can be used in place of any conventional water-washable fluorescent penetrant of the same level.

Indicated on:

- Aluminium.
- Steel.
- Nickel.
- Titanium.
- Plastic.
- Not suitable for most magnesium alloys. Assess compatibility before use.

COMPOSITION

Water-based mixture of organic fluorescent dyes, glycols and surfactants, NPE-free.

N.B.: Like all CGM products, ECO Water Fluor 1 is tightly controlled to ensure batch uniformity, optimal process verification and control reliability.

For the detection of open discontinuities on the surface in:

- Melting.
- Forging.
- Extruded.
- Machined parts.

SPECIFICATIONS

- Free of hydrocarbons.
- Biodegradable.
- Excellent removability by washing with water.

PACKAGING TYPE

- 10 L cans
- 200 L metal drums

APPLICABILITY

Recommended for the automotive sector and for applications where classic penetrants can attack the surface of the parts under inspection, such as plastics.

INSTRUCTIONS FOR USE

- Ensure that the surface under inspection is clean and dry and free of oil, grease and other contaminants.
- Apply the penetrant by dipping, brushing and spraying. Completely cover the area to be inspected.
- Wait for the expected penetration time. The penetration time is primarily a function of the type of discontinuity to be detected and is specified by the relevant standard. Remember, however, that the minimum dwell time of the penetrant is about 10 minutes. A penetration time of 20 minutes is recommended as this is adequate for most situations. In any case, it is advisable to refer to the company standards or those to be applied.



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- Remove excess penetrant from the surface using clean water in the temperature range of +10°C to +38°C for no longer than 2 min. and with a pressure not exceeding 280 kPa. This operation must be performed under a UV lamp to verify the effectiveness of the removal.
- Dry the workpiece by placing it in a controlled recirculating hot air dryer at a temperature below +70°C, or with a classic hair dryer held at a distance of about 300 mm from the surface under examination, for the minimum time necessary and never more than 30 min.
- Apply one of our following developers to maximise the sensitivity of the penetrant and provide a contrasting white background:
 - **Velcontrast – dry powder**
 - **Rotrivel U – solvent-based**
- Allow a minimum development time of 10 minutes before inspection. In any case, it is recommended to refer to the company standards or those to be applied.
- Inspect the workpiece using a suitable UV lamp with the required light intensity value. Any indications will emit a bright yellow-green fluorescence.
- At the end of the inspection, developer and penetrant residues can be removed by wiping the surface with a cloth, washing with water or using **Velnet/Solnet**.

TECHNICAL SPECIFICATIONS

	ECO Water Fluor 1	ECO Water Fluor 3	ECO Water Fluor 9
Class AMS 2644	Type I – Method A(W)	Type I – Method A(W)	Type I – Method A(W)
Class EN-ISO 3452	Type I – Method A	Type I – Method A	Type I – Method A
Appearance	Clear yellow-green solution	Clear yellow-green solution	Clear yellow-green solution
Odour	Virtually odourless	Virtually odourless	Virtually odourless
Density at 20°C	1.02 g/cm ³	1.02 g/cm ³	1.02 g/cm ³
Flash point ASTM D3828	Non-flammable	Non-flammable	Non-flammable
Kinematic viscosity 40°C	6.276 mm ² /sec	8.375 mm ² /sec	8.186 mm ² /sec
Water tolerance	> 5%	> 5%	> 5%
Sensitivity AMS 2644	Level 0,5 Very low	Level 1 Low	Level 2 Medium
Sensitivity EN-ISO 3452	Level 0,5 Very low	Level 1 Low	Level 2 Medium

Typical values.



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USER RECOMMENDATIONS

NDT method	Water-washable Fluorescent Penetrant Inspection
Usage temperature	From -4°C to +52°C ASTM E165/EN ISO 3452-1
Preliminary cleaning	Velnet/Solnet
Recommended penetration time*	10 to 20 min.
Recommended removal time (with water)**	15 sec. to 1 min.
Developer	Rotrivel U – Velcontrast Dry Powder
Final cleaning	Water – Velnet/Solnet – Detergent H ₂ O
Coverage	20-30 m ² for litre
Shelf life	3 years at a temperature between 5°C and 45°C, in a dry place out of direct sunlight
Accessories EN ISO 3452	Type 1 reference blocks Type 2 reference blocks
UV lamp EN ISO 3059	Labino

* The times indicated refer to working temperatures between 10 and 52°C, for temperatures between 4 and 10°C the times indicated must be doubled.

** The times indicated vary depending on the water temperature (10-38°C), the type of finish of the part to be inspected and the size of the defects to be detected.

COMPLIANCE WITH STANDARDS

- ASME Sect. V Art. 6
- ASTM E165
- ASTM E1417
- EN ISO 3452-2
- PMUC (certificate of conformity on request)

- It allows quick washing of parts to be inspected due to its excellent washability properties.
- Reduced background fluorescence even on rough surfaces.
- Minimises water treatment costs.
- Easier to use due to non-flammability.
- In automatic spraying systems, it does not clog up the nozzles, thus reducing maintenance time.

BENEFITS

- Less environmental impact and less wastewater pollutants.
- Excellent detection of discontinuities.
- Easy to apply thanks to good wettability.
- Facilitated inspection and evaluation process.

HEALTH AND SAFETY

Read all health and safety information before using this product. This information can be found in the Safety Data Sheet, available on request.

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