

### Approvals and conformities

ASME  
ISO 3452-2  
QPD-AMS 2644

**MANUFACTURER: SHERWIN (USA) / NDT-Europa (NL)**

### DESCRIPTION / APPLICATION(S):

Type 1, method A, level 2, according AMS 2644 and ISO 3452-2, water washable fluorescent penetrant designed for detecting surface defects.

**Companion products:** DR-60, N120 degreasers, DR-62, N106A removers, D-100, D-90G, D-106, R60 developers

### DIRECTIONS FOR USE

This describes the basic process, but they may need to be amended by the user to comply with applicable specifications and/or inspection criteria provided by the contracting agency.

Before any application, it is necessary to remove all stains that could clog the defects with a suitable process.

#### Application :

Apply HM-412 only to clean, dry surfaces by spraying, flowing, brushing or dipping.

In this case, it may be better to dip parts during 1/3 of contact time and allow the penetrant to drain from the part surface back into the penetrant tank for 2/3 of contact time.

Total dwell time: 5 to 30 minutes.

#### Removal :

Use a ambient temperature water wash at pressure between 30 and 200 kPa, hydraulic or hydropneumatic gun (air pressure between 0,1 and 2 bars according to applicable specifications).

To avoid washing entrapped penetrant from surface flaws, do not use high water pressures and temperatures, or prolonged washing and scrubbing.

Removal is done under UV-A light to be sure there is no more fluorescent background at the end.

**Drying :**

Circulating warm air (60-80°C). Using pressurized air, infrared lamp or warm air pistol is strongly not recommended.

**Developing :**

HM-412 is self developing. Nevertheless it is recommended to use a developer as listed above.

**Inspection :**

It shall be done in a darkened area (visible light level less than 20 lux) and under sufficient UV-A light (minimum 1000 µW/cm<sup>2</sup>, if possible more than 1500 µW/cm<sup>2</sup>). Actinic blue possible.

## **TECHNICAL CHARACTERISTICS**

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Appearance ..... green liquid  
 Fluorescence ..... yellow green  
 Flash point ..... > 110°C

## **PRECAUTIONS FOR USE AND STORAGE**

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**Transport / Handling:** Refer to Material Safety Data Sheet (MSDS).

**Storage :** Keep away from moisture

Temperature range: 0°C à 50°C

Keep packaging closed after taking out some of the product.

**This technical data sheet replaces and cancels the previous one.**

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