

Met-L-Chek Company manufactures a complete line of emulsifiers used in the fluorescent (**Type 1**) and visible (**Type 2**) dye penetrant inspection process. All Met-L-Chek Company emulsifiers are qualified to **AMS-2644** and are sold under the *Met-L-Chek*® and **Pen-Chek**® trademarks. Met-L-Chek Company products are manufactured under license in The Netherlands by NDT Europa.

E-58D is a Method D (hydrophilic) inspection penetrant emulsifier approved to **AMS-2644** for use with **FP-94**, **FP-93A(M)**, **FP-95A(M)**, and **FP-97A(M)** fluorescent (**Type 1**) post emulsifiable penetrants. Method D emulsifiers are used either by immersion or spray on. The emulsifier is diluted with water to the desired working concentration. For immersion the use range is 17 - 20 % or 1 part emulsifier to 4 parts water. The concentration is controlled by using a brix refractometer and a concentration chart. For spray applications the concentration is kept below 5 %. In immersion applications the penetrant covered part is given a quick water wash and then immersed into the gently agitated emulsifier from 30 seconds to 2 minutes depending upon the part surface roughness. The part is removed and washed. The pre-rinse step may be omitted for the spray application method of the emulsifier.

E-58D is listed on the Qualified Products List for AMS-2644. It meets the requirements of AMS-2647, ASME Boiler and Pressure Vessel Code Section V, ASTM E-165, and ASTM E-1417, for penetrant inspection materials.

| Guide to METHOD "D" | (hydrophilic) processing per ASTM | |
|---------------------|-----------------------------------|--|
| <u>Ě-1417</u> | | |

1. Part must be clean, dry and at a temperature of $4.4^{\circ}-52^{\circ}C$ ($40^{\circ}-125^{\circ}F$) before penetrant is applied.

2. Apply Type 1 penetrant using spray, immersion, or wipe on.

3. Wait a minimum of 10 minutes; 20 minutes if temperature is 4.4° -10°C (40-50°F).

4. Pre-rinse part with water. Water temperature 10° -38°C (50° -100 °F). Water pressure < 275kPa (< 40 psi); only long enough to remove bulk of surface penetrant. This step may be skipped when emulsifier is applied by spray.

5. Immerse part in gently agitated Method D emulsifier diluted to 17-20%. for 30 seconds to 2 minutes depending upon part roughness For spray applications emulsifier concentration should be 1-5% and spray contact for less than 2 minutes.

6. Wash part; water temperature $10^{\circ}-38^{\circ}C$ ($50^{\circ}-100^{\circ}F$). Water pressure < 275kPa (< 40 psi); if a hydro-air nozzle use limit pressure to < 172kPa (<25 psi). Distance >30cm (>12 inches). Wash time-only long enough to remove surface fluorescence under UV-A.

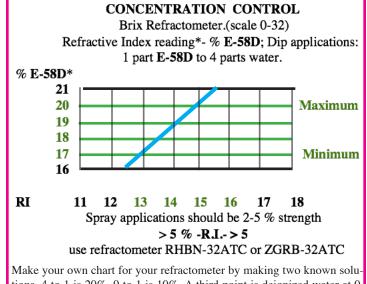
7*. Dry part; temperature not to exceed 71°C (160°F), time - only long enough to dry surface.

8. Apply dry powder developer, form "a", by dusting, or non aqueous developer, form "d", by spraying.

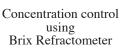
8A*. If water based developers forms "b or c" are used they are applied by immersion or spray, prior to step 7 drying.

9. Wait a minimum of 10 minutes before inspection. Maximum time is 1 hour for form "d" (nonaqueous), maximum 2 hours for forms "b & c" (aqueous), and maximum 4 hours for form "a" (dry powder). If times are exceeded, clean part and reprocess.

10. Use UV-A illumination of >1000 μ w/cm² @ 15inches (38.1 cm) in a darkened area of <21 lux visible light (<2 foot candles).



tions, 4 to 1 is 20%, 9 to 1 is 10%. A third point is deionized water at 0. E-58D 20% solution







Typical Physical Properties

Form: clear reddish orange viscous liquid Density:1.08 K/L Flash Point: > 93°C (> 200°F) Viscosity 20.7 mm²/s Water content: 3.3% Water tolerance: 100% Brix RF reading at 20%: 14.8 Corrosion of aluminum: none Corrosion of carbon steel: none Corrosion of magnesium: none Corrosion of stainless steel: none Corrosion of titanium: none Chloride content: < 50 ppm (0.005%)Fluoride content: < 50 ppm (0.005%)Sulfur content: < 100 ppm (0.01%)Mercury: none VOC's: 0 g/L Ozone layer depleting substances: none PCB's: none

> The warranty shelf life of the product is 5 years from date of batch approval.

Specifications

AMS -2644 **AMS-2647** ASME B & PV code Sec. V **ASTM E-165 ASTM E-1417** ISO 3452-2:2005 P & W PMC # 4355-7 & -47 RR RPS-702-7, CSS-232, Omat # 621B Snecma sensibilité S3 & S4.



H315 Causes skin irritation. H318 Causes serious eye damage. H373 May cause damage to organs (kidney) through prolonged or repeated exposure if swallowed. H412: Harmful to aquatic life with long lasting effects.

Danger

GHS Precautionary statements:

- **P102:** Keep out of reach of children.
- P261: Avoid breathing dust/fumes/gas/mist/vapors/spray.
- **P264:** Wash skin thoroughly after handling.
- **P273:** Avoid release to the environment.
- P280: Wear protective glove/clothing/eye protection/face protection.
- P284: In case of inadequate ventilation wear respiratory protection.

Product Data Sheet E-58D **Emulsifier**

2 10/2015

Product Availability

1 gallon (3.7L) plastic bottle 5 gallon (18.9L) plastic jug with our spout 55 gallon (208L) plastic drum

NSN

| 1 gallon | 6850-01-269-1878 |
|-----------|------------------|
| 1 gallon | 6850-01-268-8618 |
| 5 gallon | 6850-01-268-6715 |
| 5 gallon | 6850-01-268-6717 |
| 5 gallon | 6850-01-268-6719 |
| 5 gallon | 6850-01-121-0948 |
| 55 gallon | 6850-01-268-6716 |
| 55 gallon | 6850-01-268-6718 |
| 55 gallon | 6850-01-121-3007 |
| | |



GHS response statements:

- **IF INHALED:** Remove person to fresh air and keep comfortable for breathing, get medical advice/attention if you feel unwell.
- IF ON SKIN: Wash with plenty of water. If skin irritation occurs, get medical advice/attention.
- **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easily to do. Continue rinsing, get medical attention.
- **IF SWALLOWED:** Immediately call a poison center/doctor/ physician. Do Not induce vomiting.
- IF ON CLOTHING: Take off contaminated clothing and wash before reuse.

Transport:

DOT- not regulated < 450 L or 119 Gal containers IATA- not regulated IMDG- not regulated

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