



Penetrant Professor Approved

E-58D Emulsifier



Met-L-Chek Company manufactures a complete line of emulsifiers used in the fluorescent (Type 1) and visible (Type 2) dye penetrant inspection process.

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.

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 E-1417

- 1. Part must be clean, dry and at a temperature of 4.4°-52°C (40°-125°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).
5. Immerse part in gently agitated Method D emulsifier diluted to 17-20%.
6. Wash part; water temperature 10°-38°C (50°-100 °F).
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).

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

CONCENTRATION CONTROL Brix Refractometer.(scale 0-32) Refractive Index reading*- % E-58D; Dip applications: 1 part E-58D to 4 parts water. Includes a grid chart with RI values 11-18 and spray application instructions.



E-58D 20% solution

Concentration control using Brix Refractometer





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

AMS-2647
 ASTM E-1417

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 Information



Danger

GHS Hazard Statements:
H302 Harmful if swallowed.
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.

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.



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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