

VISIBLE DYE PENETRANT MATERIALS



PRODUCT SUMMARY

VISIBLE PENETRANTS

Sherwin Incorporated produces two standard, visible dye penetrants; one nonwater-washable, and the other water-washable or water-removable.

DP-40 Dye Penetrant (nonwater-washable): Approved Type II, Method B post-emulsifiable and Method C solvent wipe-off penetrant MIL-I-25135-D & E. (Also, approved Group I and II under MIL-I-25135-C.) Intense red color for maximum color contrast. Meets all applicable codes and standards, e.g. ASME, NAVSHIPS, MIL-STD-6866, etc.

DP-51 Dye Penetrant (water-washable): Approved Type II, Method A water-washable or water wipe-off and Method C solvent wipe-off penetrant MIL-I-25135-D & E. (Also, approved Group I and III under MIL-I-25135-C.) A water-removable visible dye penetrant with sensitivity equivalent or superior to most nonwater-washable Type II penetrants. Meets all applicable codes and standards, e.g. ASME, NAVSHIPS, MIL-STD-6866, etc.

KO-17 HI-TEMP® Penetrant: Visible dye penetrant, approved Groups I and III, MIL-I-25135-C, D & E. Finds flaws on surfaces at elevated temperatures, up to 350°F. Saves time; for weldment inspection before complete cooling (maintain pre-heat temperature); in-service inspection of chemical processing equipment, etc. Used with Hi-Temp KO-19 Remover and either D-100 or Hi-Temp D-350 Developer. ASME Code qualification procedure compliance.

(Under certain circumstances, two other Sherwin Incorporated visible dye penetrants, **DP-50** and **By-Lux** may be appropriate. **DP-50** is similar to **DP-51**, but less bright; and may be appropriate for dip tank procedures. **By-Lux** may be useful in operations that combine visible and black light procedures. See "Product Summary — Specialty Penetrant Materials" for a description of these and other specialty products.)

REMOVER/CLEANERS

Three standard "Remover/Cleaners" are provided. All are volatile solvents. Two are nonchlorinated solvents and flammable, and the third is chlorinated and nonflammable. The chlorinated solvent material does a better job of pre-cleaning oily surfaces. A fourth "Remover/Cleaner" is specially formulated for use on hot surfaces.

DR-60 Cleaner/Remover: Clear solvent. Method C, Class (2) Remover (nonchlorinated) MIL-I-25135-D & E. Flash point about 110°F. Used both for cleaning prior to penetrant application and for penetrant removal by wipe-off method. Evaporates clean without residue. Meets applicable codes and specifications.

DR-62 Cleaner/Remover: Clear solvent. Method C, Class (2) Remover (nonchlorinated) MIL-I-25135 E. Use both to clean prior to penetrant application and to remove penetrant by wipe-off method. Evaporates more rapidly than DR-60. Leaves no residue. Meets applicable codes and specifications.

KO-19 HI-TEMP® Remover: For use with Hi-Temp KO-17 Penetrant. Approved Group I Remover, MIL-I-25135-C, D & E. Use as a wipe-off remover. (Same product as "KO-19 Foam Remover" but used in slightly different manner, applied with toweling rather than directly to surface.)

KO-19 FOAM Remover: Used for removal of both Type I and II penetrants when shallow, wide cracks are suspected. Foam — similar to shaving lather — is emitted from the KO-19 spray can directly on the penetrant treated surface. Foam lifts penetrant from the surface, but not from the cracks. Dry toweling is used to wipe surface clean.

EMULSIFIERS

Two emulsifiers are offered. **ER-85**, a "lipophilic" type, is oil-based and used full strength, and **ER-83A**, a "hydrophilic" type, is detergent-based and used highly diluted with water.

ER-85 Emulsifier (Lipophilic): For use with nonwater-washable visible dye (and fluorescent) penetrants (Method B, MIL-I-25135-D & E). Applied full strength as an over-layer to penetrant following penetrant dwell. Makes possible the removal of nonwater-washable penetrant with water spray.

ER-83A Emulsifier (Hydrophilic): Hydrophilic emulsifier (Method D) is also offered for use with nonwater-washable penetrants including **DP-40**. However, MIL-I-25135-D & E does not provide for using hydrophilic emulsifiers with Type II (visible) penetrants, only Type I (fluorescent). **ER-83A** is diluted with water before use. Process includes a plain

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DEVELOPERS

Sherwin Incorporated offers three nonaqueous (volatile solvent carrier) developers. **D-100**, is more sensitive, uses alcohol as the carrier, and is flammable. **D-106** is a nonchlorinated solvent based developer that dries more quickly than **D-100**. **D-350** is designed to be used at high temperatures.

D-100 Developer (nonaqueous): Approved MIL-I-25135/AMS-2644 for both Type I and II penetrants. (Also, approved Groups I through VII.) Adsorbent white particles suspended in volatile solvent (alcohol). Maximum sensitivity. Lays on surface in thinner, more uniform coat. Flash point about 60°F. Apply by spraying. Meets all applicable codes and standards.

D-106 Developer (nonaqueous): Approved MIL-I-25135-E/AMS-2644 for Type I and Type II penetrants. Adsorbent white particles suspended in volatile solvent. Lays on surface in thinner, more uniform coat. Apply by spraying. Meets all applicable codes and standards.

D-350 HI-TEMP® Developer: Nonaqueous. Hi-Temp D350 is used with Hi-Temp K0-17 Penetrant and Hi-Temp KO-19 Remover. White adsorbent particles suspended in nonchlorinated, volatile solvent (alcohol). Available only in spray cans. Performs on elevated temperature surfaces; 200°F to 350°F. Approved Group I and III under MIL-I-25135-C.

PRECAUTIONARY INFORMATION

Materials described on this Product Summary should be used in accordance with instructions. Use with adequate ventilation and away from sparks, fire and open flame. Avoid contact with skin. Avoid breathing vapors or spray mist. Do not get in eyes. Do not take internally.

The products listed are for industrial use by qualified personnel only. Like all nondestructive testing methods, the penetrant process has limitations and no penetrant manufacturer claims that the use of these materials will show all dangerous cracks or defects under all conditions.

LIMITED WARRANTY

Buyer agrees that if any of these products are defective, manufacturer's and seller's only obligation shall be to replace the product or refund its purchase price.