

DP-52 DYE PENETRANT

ESPECIALLY FORMULATED FOR INSPECTION OF CERAMIC SURFACES



PRODUCT INFORMATION

Description: DP-52 is a read colored dye penetrant liquid used to locate cracks, laps, pores, lack of bond of ceramic to metal, and similar surface flaws. It is also effective in finding defects in any insoluble, nonporous substance including both ferrous and nonferrous metals, glass and many plastics. Referred to as the "visible dye penetrant" method or "color contrast" method of inspection.

Special Features: DP-52 is formulated from ingredients which have a high affinity for ceramics. It is formulated as a production inspection material for industrial ceramics such as technical ceramics and spark plug. The water wash feature means less spillage and over spray can be flushed away with water for easy cleanup.

DP-52 Dye Penetrant can be applied by dipping, brushing, or spraying. Excess penetrant can be removed by simple water wash. DP-52 offers the following advantages.

1. Brings flaws into "sharper, clearer focus" with a more intense, deeper red color for maximum contrast on light colored ceramics.
2. Performs more reliably over a greater range of temperatures.
3. DP-52 meets stringent low sulfur and chlorine specifications.
4. Long lasting flaw-mark indications; less fading.
5. Higher sensitivity for discontinuities in ceramics. DP-52, with its affinity for ceramics compared to conventional penetrants, finds more minute surface openings and enters flaws in greater volume.
6. Attraction for metal, water washable; easy to remove.

Companion Materials:

Developer-	Developer not normally required Sherwin D-100 Nonaqueous (form d) equivalent QPL-25135-listed developer
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Container Sizes:	one-gallon cans case of 4 one-gallon cans five-gallon pails 55-gallon drum
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Basic Instructions: (These instructions describe the basic process, but they may be amended by the user to comply with applicable specifications and/or inspection criteria provided by the contracting agency.)

1. **Clean Surface:** DP-52 must be applied to a dry surface that is free of soils, oils, or solvents that would impede the penetrant's entering surface flaws. If there is any doubt concerning the surface's cleanliness, the surface should be cleaned with Sherwin's DR-61, DR-60, or similar products.
2. **Application:** Apply DP-52 only to clean, dry surfaces by spraying, flowing, brushing or dipping. Ceramics must be in a fired condition.
3. **Dwell-Time:** A minimum 5 minute dwell time is suggested, although when ambient temperatures are below 60°F, when particularly tight cracks are suspected, or when the part is especially critical, the dwell time may be extended to 10 minutes, or longer.

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Do not soak the part. To increase sensitivity, as well as to conserve material, allow the penetrant to drain from the part.

4. **Removal:** Rinse part with ambient temperature, coarse water spray. Water pressure should not exceed 30 psi. Do not over wash, or use heated water.
5. **Drying:** Surface must be free of water before inspection (or before applying developer).

Excess water may be removed in one of several ways. Small areas are simply blotted dry — wiping may smear indications. Larger parts should have as much water as possible removed by a blast of air after which they may be placed in an oven or blown dry with a heat gun. Do not allow surface temperatures to exceed 140°F or parts to remain in oven longer than necessary.

6. **Developing:** **DP-52** is self-developing when used on light colored ceramics. However, on dark surfaces or metal surfaces, it is necessary to provide a contrasting background; Sherwin **D-100 Developer** is suggested for that purpose.

Spray **D-100** lightly and evenly on completely dry part surface.

Normally, a developer is not required when inspecting light colored ceramics. Once the surface is dry, wait ten minutes and inspect the surface for red marks which indicate flaws. Red lines are cracks; scattered red dots indicate porosity; dots in a line may indicate an incipient crack or lack of bond. In most cases, a light pink color will remain on the part surface following inspection. Re-firing may be required to remove the pink residue completely.

PRECAUTIONARY INFORMATION

DP-52 is a combustible liquid. Use with adequate ventilation and away from sparks, fire or open flame. Avoid prolonged or repeated contact with skin. Do not take internally. Avoid prolonged or repeated breathing of vapors. Read the label on the container for additional precautionary information.