



## PAR-4 SOLUTION FILTER PARTICLE FOR INSPECTING UNFIRED CERAMICS

### Technical Data Sheet

**Description:** Unfired ceramics are an inspection problem; their absorbent surfaces do not lend themselves to conventional penetrant inspection methods. Yet, cracks resulting from forming and drying must be found before firing in order to avoid processing a flawed part.

PAR-4 is both a laboratory and a production test material for locating defects in the early stages of ceramic part production. PAR-4 is suitable for technical ceramics, electrical insulators, and many other porous substances, including powdered metals.

PAR-4 solution is a "ready-to-use" mixture of yellow-green fluorescent particles and a light petroleum distillate. It is virtually odorless and nonflammable, with a flash point above 200°F. PAR-4 is an OSHA Class IIB material.

PAR-4 solution is a relatively nonvolatile mixture with a medium particle concentration. On request, the product can be formulated to meet customer requirements with greater or less particle content and/or more volatility.

For volume production situations, PAR-4 may be ordered as a concentrate. PAR-4 concentrate information is available on request.

### **Packaging**

One-gallon can

Case of 4 one-gallon cans

**Basic Instructions:** (These instructions describe the basic process of using PAR-4. They may need to be amended by the user to comply with applicable specifications and/or inspection criteria provided by the contracting agency.)

- 1. Application:** Apply PAR-4 solution to the part surface. Normally, PAR-4 is applied by immersing the part in an agitated solution bath. PAR-4 solution can also be applied by flowing or spraying.

Surface openings, such as cracks and checks, will rapidly absorb PAR-4, collecting the fluorescent particles in the flaw openings. The area adjacent to a flaw opening will tend to become devoid of solution.



2. **Black Light Inspection:** After a few minutes, inspect the part under black light. Unflawed surfaces will display uniform fluorescence; whereas, flaw-entrapped fluorescent particles will show as glowing lines or marks under the black light. Black light specifications for fluorescent penetrant inspection apply to PAR-4.

PAR-4 indications will remain for several hours. Kiln firing completely decomposes PAR-4 residue.