

# Product Data Sheet

**ZYGLO®**

## ZL-2C, ZL-27A & ZL-37 Fluorescent Post Emulsifiable Penetrants

### Classification:

- *Type 1, Method B* Penetrant when using ZE-4B emulsifier (lipophilic)
- *Type 1, Method C* Penetrant when using SKC-S solvent cleaner/remover
- *Type 1, Method D* Penetrant when using ZR-10B (20%) remover (hydrophilic)
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### General Description:

The **ZYGLO** post emulsifiable fluorescent penetrants are used for a wide range of sensitivity applications and are formulated to be impervious to water to assure against being over washed from defects. The MAGNAFLUX Post Emulsifiable Penetrants require the application of a lipophilic emulsifier or a hydrophilic emulsifier to render it washable with water.

Each penetrant fluoresces a bright greenish-yellow color under ultraviolet radiation. Use of a black light source, with peak wavelength of 365 nanometers, such as the **MAGNAFLUX® ZB-100F Fan-Cooled black light**, is recommended. Our penetrants meet OSHA requirements for Class III B liquids due to their high flash points and can be used in open dip tanks.

### Applications:

- **ZL-2C (Level 2 - Normal Sensitivity); ZL-27A (Level 3 – High Sensitivity)**  
ZL-2C and ZL-27A are typically used on castings, forgings, and extrusions, rough and machined surfaces to find cracks, seams, laps, laminations and porosity.
- **ZL-37 (Level 4 – Ultra-High Sensitivity)**  
ZL-37 is ideal for titanium turbine components, investment castings and other high stress critical components where detection of fine, tight and broad open shallow discontinuities is a must.

### Typical Properties:

| Typical Properties      | ZL-2C <i>Level 2</i><br><i>Normal Sensitivity</i> | ZL-27A <i>Level 3</i><br><i>High Sensitivity</i> | ZL-37 <i>Level 4</i><br><i>Ultra High Sensitivity</i> |
|-------------------------|---|--|---|
| Viscosity @ 100° F (cs) | 5.9   | 9.8  | 13.4  |
| Flash Point (PMCC)      | >200° F   | >200° F  | >200° F   |
| Sulfur (ppm)            | <1000   | <1000  | <1000   |
| Chlorine (ppm)          | <1000   | <1000  | <1000   |
| Halogen Content (ppm)   | <1000   | <1000  | <1000   |
| Sodium (ppm)            | <100  | <100   | <100  |
| Fluorine (ppm)          | < 50  | < 50   | < 50  |

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## Method of Application:

Test parts must be clean, free of all oil, grease or other foreign contaminating substances, and dry before penetrant is applied. Penetrants may be applied by immersion, dip, brush or flow-on, conventional or electrostatic spray. The area to be inspected must be completely covered with penetrant.

Warning! Penetrants attack and even dissolve many kinds of plastic pipe. Polyvinyl chloride (PVC) pipe is especially vulnerable, and can crumble after only a few days of exposure. Even diluted penetrant rinsings attack it rapidly. ABS plastic pipe is nearly as sensitive. When installing plumbing to handle penetrant rinsings, use metal pipe.

## Plastics Compatibility:

Penetrant materials are typically compatible with nylon, teflon, acetal, polypropylene, and epoxies. However, we still recommend that the penetrant is evaluated for compatibility on actual test pieces. Penetrants may stain, soften, or even dissolve plastic materials.

## Penetrant Removal:

Post emulsifiable penetrants require the use of a lipophilic or hydrophilic emulsifier to render it water washable. For inspection of small areas, the solvent wipe technique (Method C) is commonly employed using SKC-S solvent cleaner/remover. Moisten a clean wiping media with SKC-S and wipe the inspection area free of surface penetrant. Do not flood the inspection surface with cleaner/remover because the sensitivity may be impaired.

## Developer Application:

Developers should be used to maximize the sensitivity of our penetrant. Aqueous developers are applied prior to drying; dry powder and non-aqueous developers after drying.

**IMPORTANT NOTE!** Parts should **not** remain in aqueous developers for any length of time, as the penetrant sensitivity could be impaired.

Recommended Developers: ZP-4B Dry Powder Developer; ZP-9F Non-Aqueous Developer, SKD-S2 Non-Aqueous Developer, ZP-5B Water Suspendible Developer, and ZP-14A Water Soluble Developer

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## Specification Compliance:

AMS-2644

ASTM E 1417

MIL-STD-271

ASME B & PV Code, Sec. V

MIL-STD-2132

Boeing BAC 5423 PSD 6-46 or 8-4

AECL

ASTM E 165

Boeing PS-21202

Coverage: 1 gallon (ZL-2C, ZL-27A, ZL-37) covers approximately 1000 square feet.  
One aerosol can 16 oz. by volume (ZL-27A) covers approximately 65 square feet.

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