

**Photoinitiator for UV Radiation Curing Systems**

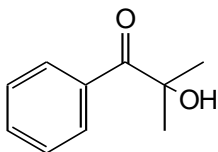
**PHOTOINITIATOR**

**1. General**

Chivacure® 173 is a liquid-type non-yellowing photoinitiator first introduced in 1980s by Merck in the name of Darocur 173. Good solvency properties make it ideal for making photoinitiator blends. It is the initiator of choice for coating on wood, metal and plastic as well as UV-cured adhesives.

**2. Properties**

Structure :



|                   |   |  |
|-------------------|---|--|
| CAS Name          | : | 2-Hydroxy-2-methyl-1-phenyl-propan-1-one       |
| CAS No.           | : | 7473-98-5                                      |
| EINECS No.        | : | 231-272-0                                      |
| Molecular Formula | : | C <sub>10</sub> H <sub>12</sub> O <sub>2</sub> |
| Molecular Weight  | : | 164.2  |

**3. Physical Data**

|                  |   |  |
|------------------|---|--|
| Appearance       | : | Colorless to light yellow clear liquid |
| Odor             | : | Very Faint                             |
| Melting point    | : | ca. 4 °C                               |
| Boiling point    | : | 80 - 81 °C @1 mmHg, 250 °C @760 mmHg   |
| Specific gravity | : | 1.074 @20 °C                           |

**4. Solubility**

Insoluble in water; Soluble in most organic solvents and compatible with most unsaturated pre-polymers, resins and monomers used in the UV curing industry

**5. Specification**

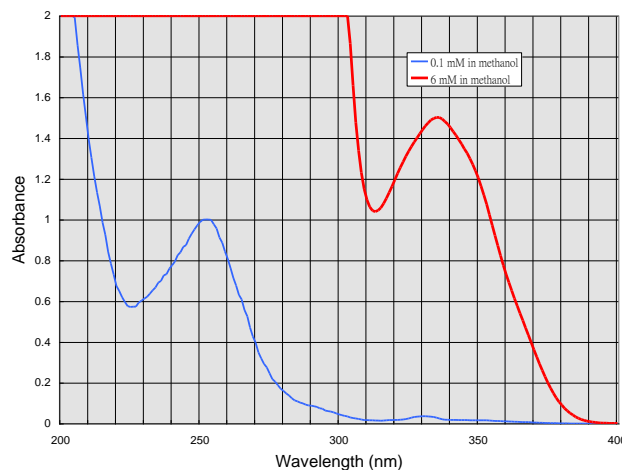
|               |   |                               |
|---------------|---|-------------------------------|
| Appearance    | : | Light yellow and clear liquid |
| Assay         | : | 98.0% min.                    |
| Boiling point | : | 105 - 115 °C @3 - 5 torr      |
| Volatiles     | : | 0.5% max.                     |
| Solubility    | : | Clear                         |

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**6. Application**

Chivacure<sup>®</sup> 173, when irradiating with UV light, undergoes a homolytic and intramolecular type of breakage to generate a pair of free radicals to initiate the polymerization of UV curable systems. It does not require hydrogen donor to initiate its radicals. However its radicals are very sensitive to oxygen in the air.

It is the first initiator to be used for non-yellowing clear coating. And because it is a liquid type and has good solvency properties, it is easier to handle and formulate. It is used to initiate polymerization of systems based on unsaturated acrylic monomers as reactive diluents.

The usage rates of Chivacure<sup>®</sup> 173 vary according to the composition of the system, source of light, line speed, and film thickness but usually lie between 0.5% to 5% w/w. The speed of curing can be greatly enhanced by addition of photosensitizers such as Chivacure<sup>®</sup> ITX and DETX. Chivacure<sup>®</sup> 173 can be used for printing ink, solder masker; overprint varnishes and wood lacquers, adhesive and photoresist dry film.

**7. UV Spectrum**
**UV SPECTRA OF CHIVACURE 173**

**8. Storage**

Must be stored in closed containers in dark dry conditions.

**9. Packaging**

30 kg plastic drum/200 kg iron drum

**10. HS Code**

2914 4090