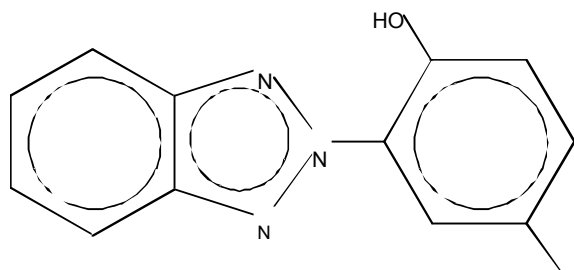


# UV STABILIZER

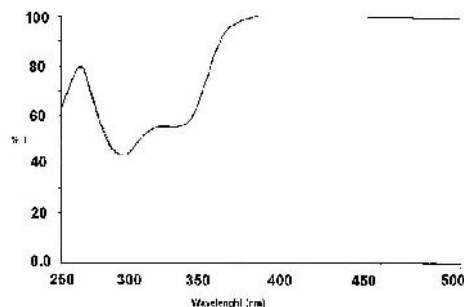


## Chemical and physical characteristics(\*)

|                               |  |
|-------------------------------|--|
| Common Name                   | Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl        |
| CAS Number                    | 2440-22-4  |
| EINECS Number                 | 219-47-05  |
| Formula                       | C <sub>13</sub> H <sub>11</sub> N <sub>3</sub> O |
| Molecular weight              | 214.2  |
| Appearance                    | light yellow powder                              |
| Melting Point (°C)            | 128-132  |
| Bulk Density (g/cc)           | 1.00   |
| TGA(air 20°C/min)             |  |
| 1% loss                       | 156  |
| 2% loss                       | 166  |
| 10% loss                      | 197  |
| TGA (N <sub>2</sub> 20°C/min) |  |
| 1% loss                       | 157  |
| 2% loss                       | 168  |
| 10% loss                      | 201  |
| Solubility (g/100ml 25°C)     |  |
| Acetone                       | 2.5  |
| Methanol                      | 0.2  |
| Ethyl Acetate                 | 3.5  |
| Methylmethacrylate            | 5  |
| Styrene                       | 7.2  |
| Water                         | 0.0  |
| Ethanol                       | 0.3  |
| Toluene                       | 6.0  |
| Diocyl Phthalate              | 2.5  |

## Properties

It is an Absorber, belonging to benzotriazole derivatives; its high and broad absorption capacity ranges from 230 to 380 nm, with two maxima of absorbance at 298 and 337 nm (Fig. 1). SV does not absorb in the visible. UV Stabilizer is soluble in aromatic solvents, in styrene and methyl methacrylate; it is moderately soluble in polar solvents, e.g. esters, in aliphatic hydrocarbons and in plasticizers. It is practically insoluble in water. UV Stabilizer is compatible with different polymeric materials and additives normally used in polymer formulations. It is also thermally stable. However it may form colored complexes with heavy metal ions.



## Applications

It is recommended for the Stabilization of:

- Polystyrene
- Rigid and elastic PVC
- Unsaturated polyesters (particularly the flame retardant types)
- Polycarbonates
- Polyurethanes

It is also suitable for the UV stabilization of:

Polymethylmethacrylate and acrylic resins, polyacetals, polyvinylidene chloride, esters of cellulose, epoxy and urea-melamine resins, elastomers.

### Use

We recommend addition levels ranging from 0.05 to 0.5 % by weight of polymer.

Some typically employed concentrations are given below:

|  |           |
|--|-----------|
| Polystyrene and its resins                 | 0.05-0.3% |
| Rigid PVC                                  | 0.1-0.5%  |
| Elastic PVC                                | 0.05-0.3% |
| Unsaturated Polyester                      | 0.1-0.3%  |
| Unsaturated Polyester flame retardant type | 0.3-0.5%  |
| Polycarbonates                             | 0.15-0.3% |
| Polyurethanes                              | 0.05-0.1% |

It is recommended that any application should be thoroughly investigated according to specific conditions of use.

### Toxicological information

LD<sub>50</sub>(oral, rat) > 2000 mg/kg  
Skin irritation (rabbit): non-irritant  
Eye irritation (rabbit): non-irritant  
Skin Sensitization (guinea pig) sensitizing

It is regulated for direct food contact applications. Specific information can be provided on request

### Transport, storage and handling

Labeling: product not classified as hazardous according to international transport regulations. Irritant, skin sensitizer, it may cause long term adverse effects in aquatic environment. In case of contact with skin, immediately remove contaminated clothing and rinse with plenty of water. In case of contact with eyes, wash immediately with plenty of water with eyelids held open. If symptoms develop, which are apparently due to ingestion or contact with the product, seek medical advice. Do not breathe dust. Store in the original closed container in a dry cool place. Protect from light. Avoid dust formation.

This data is based on technical Information available at the time of writing. However, they do not represent a specific guarantee on product performance and it is subject to change if required.