4-Methacryloxy-2-hydroxybenzophenone

High Purity Grade

This monomer (MHB) provides a means of introducing the benzophenone moiety, a strong absorber in the ultraviolet region, into polymer structures. Because the ultraviolet absorbing structure becomes a part of the polymer chain it cannot be extracted by fluids that it contacts and it is not subject to migration. As a component of the polymer structure MHB absorbs ultraviolet light preventing or reducing damage to it or to tissue or other material to be protected by the polymer. Principal applications claimed for this monomer have been in ophthalmic devices,\(^1,2\) films,\(^3\) coatings,\(^4\) and fibers,\(^5\) but have also included cosmetic preparations and toners.\(^6\)

Reactivity ratios for MHB are \(Q=1.57\) and \(\epsilon =-0.36.\)\(^7\) It is capable of free radical copolymerization with monomers as diverse as ethylene, methyl methacrylate, and 2-hydroxyethyl methacrylate in bulk, solution, and emulsion systems.

Other functions of MHB can be envisioned. It could possibly form part of a polymer-bound photocatalyst system or might be a photo-cross-linker in some polymer types.

MHB prepared under GMP guidelines can be supplied. Polysciences, Inc. also offers a technical grade (94%), catalog number 16989.

Physical Properties

- Appearance: Light yellow powder
- Melting point: 78-80°C
- Glass transition temperature: 143°C\(^7\)
- Specific gravity: 1.19*  
- Refractive index: 1.78*
- \(\lambda_{\text{max}}\) (in methanol): 205nm \((\epsilon = 3.03 \times 10^4)\)\(^7\)  
  275nm \((\epsilon = 1.18 \times 10^4)\)\(^7\)  
  325nm \((\epsilon = 7.23 \times 10^3)\)\(^7\)

* Estimated from 20% solutions in methylene chloride

Specifications

- Purity: Minimum 99%
- Melting point: 78-80°C

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References:

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