

BC-509

Hydrogen-Free Liquid Scintillator

This liquid scintillator is nearly free of hydrogen atoms, as it is formulated with a fluorinated aromatic solvent base. This makes it relatively insensitive to neutron flux. The insensitivity can be further increased by using pulse shape discrimination techniques.

BC-509 neutron-insensitive scintillator is also an effective neutron detector where it is desirable to avoid the thermalizing properties of standard hydrogenous organic scintillators. Furthermore, this fluorocarbon-based liquid scintillator has dosimetric potential, being independent of gamma ray energy within +/-10% over the range from 50 keV to 10 MeV while maintaining sensitivity down to a few mR/h (microrentgens/hour).

Scintillation Properties –

| | |
|--|-----------------|
| Light Output, %Anthracene | 20 |
| Wavelength of Maximum Emission, nm | 425 |
| Decay Time, ns | 3.1% anthracene |

Atomic Composition –

| | |
|---------------------------------|------------------------|
| No. of H Atoms per cc | 0.011×10^{22} |
| No. of C Atoms per cc | 3.16×10^{22} |
| No. of F Atoms per cc | 3.15×10^{22} |
| No. of Electrons per cc | 4.73×10^{23} |
| Atomic Percent of H Atoms | 0.18 |

General Technical Data –

| | |
|-----------------------------|------------|
| Density (20°C) | 1.61g/cc |
| Refractive Index | 1.38 |
| Flash Point | 10°C |
| Boiling Point | 80°C |
| Expansion Coefficient | 0.1%/deg.C |

Scintillation Products
Organic Scintillators



USA

Saint-Gobain Crystals
17900 Great Lakes Parkway
Hiram, OH 44234
Tel: (440) 834-5600
Fax: (440) 834-7680

Europe

Saint-Gobain Crystals
104 Route de Larchant
BP 521
77794 Nemours Cedex, France
Tel: 33 (1) 64 45 10 10
Fax: 33 (1) 64 45 10 01

P.O. Box 3093
3760 DB Soest
The Netherlands
Tel: 31 35 60 29 700
Fax: 31 35 60 29 214

Japan

Saint-Gobain KK, Crystals Division
3-7, Kojimachi, Chiyoda-ku,
Tokyo 102-0083 Japan
Tel: 81 (0) 3 3263 0559
Fax: 81 (0) 3 5212 2196

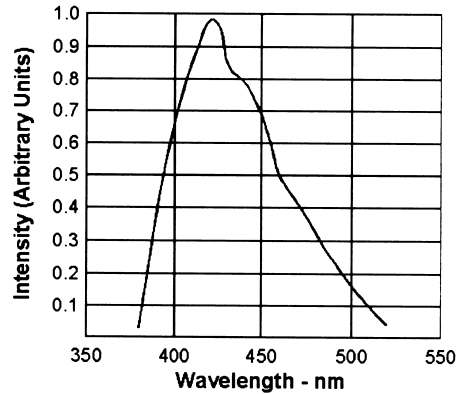
China

Saint-Gobain (China) Investment Co., Ltd.
15-01 CITIC Building
19 Jianguomenwai Ave.
Beijing 100004 China
Tel: 86 (0) 10 6513 0311
Fax: 86 (0) 10 6512 9843

www.detectors.saint-gobain.com

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Emission Spectrum –



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