

Parabar 10312

HAMPTON
RESEARCH

Solutions for Crystal Growth

User Guide / Certificate of Analysis

HR2-643

Description

Parabar 10312 is a “cryoprotectant” for both small and large molecule crystallography. Mildly air unstable small molecule compounds can be coated with Parabar under an inert atmosphere. The Parabar protected crystal sample can be cryocooled in a chilled nitrogen gas stream. Parabar has also been used successfully as a cryoprotectant for biological macromolecule crystals.

Application

When using 100% Parabar, place a small amount of Parabar on a glass slide or dish. Place the crystal (using a pipet or CryoLoop or capillary) in mother liquor into the Parabar. Parabar is not miscible with most salt/buffer/polymer reagent mixtures and the crystal will rest in the mother liquor, encapsulated by Parabar. Use the immiscibility and viscosity of Parabar to remove most of the mother liquor from the crystal by using a CryoLoop or other probe to move the crystal through the Parabar. The viscosity of the Parabar will help to pull the mother liquor from the crystal. Mount the crystal, surrounded with Parabar in a CryoLoop (macromolecule) or on a pin (small molecule). Parabar can be flash cooled.

Diluting

Parabar can be mixed with Paraffin Oil (Catalog Number HR3-411) to attain a less viscous material. When mixed with Paraffin Oil, one typically uses 25 to 50% Paraffin Oil with the 75 to 50% Parabar.

Property Test

Property Test	Results
Product Name	Parabar 10312
Synonyms	Paratone® N, Paratone® 8227, Infineum V8512 Paratone® is a registered trademark of Chevron Corporation
Product Number	HR2-643
Lot Number	264303
Appearance	Clear to Slightly Hazy
Color	Clear to Opaque
Relative Density	0.877 at 60°F
Density at 15°C	(7.32 lbs/gal, 0.88 kg/dm ³)
Flash Point [Method]	> 175°C, (347°F) [ASTM D-93]
Boiling Point	N/A

Property Test (continued)

Property Test (continued)	Results
Vapor Density (Air = 1)	N/A
Vapor Pressure	Negligible
Evaporation Rate (n-butyl acetate=1)	N/A
pH	N/A
Solubility in Water	None to Negligible
Kinematic Viscosity	641 cSt at 100°C
Kinematic Viscosity Ratio	2.05 at 100°C
Refractive Index	1.48487 at 20°C

References

1. H. Hope, Cryocrystallography of biological macromolecules: a generally applicable method. *Acta Cryst.* (1988) B44, 22-26.
2. Structure of the ligand-binding domain (LBD) of human androgen receptor in complex with a selective modulator LGD2226. F. Wang, X.-Liu, H. Li, K.-Liang, J. N. Miner, M. Hong, E. A. Kallel, A. van Oeveren, L. Zhi and T. Jiang. *Acta Cryst.* (2006). F62, 1067-1071
3. H. Hope, *Annu. Rev. Biophys. Chem.* 1990 19:107-126
4. S. Parkin and H. Hope, *J. Appl. Cryst.* (1998) pages 945-953

Technical Support

Inquiries regarding Parabar, interpretation of screen results, optimization strategies, and general inquiries regarding crystallization are welcome. Please e-mail, fax, or telephone your request to Hampton Research. Fax and e-mail Technical Support are available 24 hours a day. Telephone technical support is available 8:00 a.m. to 5:00 p.m. USA Pacific Standard Time.

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