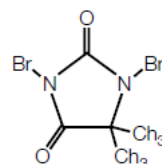


1,3-Dibromo-5,5-Dimethylhydantoin (DBDMH)

Description

DBDMH is a white powder with a faint characteristic halogen odor. It is used as a bromination reagent and is a suitable alternative to n-bromosuccinimide. This compound has also been used in the oxidation of secondary alcohols to ketones. For further information on these uses, please refer to Z. E. Jolles, Ed., *Bromine and its Compounds*, (New York, Academic Press, 1966), p 345.

DBDMH in powder, nuggets and tablets forms is also used as a water treatment biocide to control the level of microorganisms in the water. In this application DBDMH is hydrolyzed to hypobromous acid (HOBr). HOBr is the biocidally active chemical. To use the product as biocide, the product should be registered with the EPA.



(DBDMH)
CAS 77-48-5
 $C_5H_6Br_2N_2O_2$

Specifications

Appearance	powder with a faint, characteristic halogen odor, free of foreign matter
Color.....	white to off-white
Assay, wt %, min.	98.0
Volatiles, wt %, max	0.5
Bromine, wt %, min	54.8
Chlorine, wt %, max	0.1

Typical Properties

Molecular weight	285.9
Packed bulk density (at ambient temperature), g/cm ³ , approx	1.0
Melting/decomposition temperature, DSC, °C	>200
Solubility in water, wt %, 68 °F (20 °C), approx.	0.1

The shelf life of this product is at least two years at normal ambient conditions when properly stored in its original container and exposure to moisture is avoided.

Compatibility

DBDMH is an oxidizing and brominating agent. Contact in the neat form with organic materials such as alcohols and aldehydes, strong reducing agents, acids, ammonia-containing products and other oxidizing agents (such as calcium hypochlorite) should be avoided. DBDMH should be stored in high density polyethylene (HDPE), low density polyethylene (LDPE) or polypropylene (PP). Do not store this product in metal and fiberboard containers.

In its neat form, this product is expected to be compatible with Teflon®, polyvinyl chloride (PVC), Viton®, Kynar®, chlorobutyl rubber, Hypalon®, titanium and Hastelloy® C.

In its neat form, this product is not compatible with nylon and most common metals such as brass, copper, carbon steel, stainless steel, galvanized steel and aluminum.

Shipping Information

Shipping Classification

Proper shipping name.....OXIDIZING SOLID, N.O.S.
(1,3-dibromo-5,5-dimethylhydantoin)
Hazard classification.....5.1
ID number.....UN1479
Packing Group.....II
Label.....Oxidizer
Placard.....Oxidizer

Safety and Handling Information

For specific handling information, please refer to the current material safety data sheet.

Chemical Registration Number

CAS: 77-48-5
EINECS: 201-030-9

The information presented herein is believed to be accurate and reliable, but is presented without guarantee or responsibility on the part of Albemarle Corporation and its subsidiaries. It is the responsibility of the user to comply with all applicable laws and regulations and to provide for a safe workplace. The user should consider any health or safety hazards or information contained herein only as a guide, and should take those precautions which are necessary or prudent to instruct employees and to develop work practice procedures in order to promote a safe work environment. Further, nothing contained herein shall be taken as an inducement or recommendation to manufacture or use any of the herein materials or processes in violation of existing or future patent.



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