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## Cyclohexene in dropper bottles

Posted by Anonymous on Wed, 2016-02-03 09:41

Cyclohexene in dropper bottles: Standard rubber teats on dropper bottles are not compatible with cyclohexene.

Anyone know of a dropper-bottle type that would be compatible with cyclohexene?

**Voting:**



No votes yet

**Year Level:**

Senior Secondary

**Laboratory Technicians:**

Laboratory Technicians

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## cyclohexene in dropper bottles

Submitted by on 12 February 2016

Answer reviewed 24 February 2023

Cyclohexene is only used for one or two practicals each year, such as when comparing saturated and unsaturated hydrocarbons. Organic chemicals in general require special consideration when they are being transferred from their original container.

The recommended method for dispensing a few drops of cyclohexene is to transfer a small amount into a glass beaker or jar, which is kept in an operating fumehood. For short-term use, either a glass pipette fitted with rubber teat or a LDPE disposable dropping pipette is perfectly adequate. It is not recommended to store the cyclohexene in dropping bottles that are plastic (e.g., Stull™ type) or in glass bottles that have rubber-based teats or stoppers.

Cyclohexene degrades on exposure to air and light through peroxidation and polymerisation. Therefore, surplus quantities of decanted cyclohexene should be treated as waste and may be stored as non-halogenated organic waste for collection by a licenced waste contractor.

An alternative is to transfer a small amount into a small, labelled, amber glass bottle with a screw cap lid and then use a pipette to take directly from this small bottle, which is kept sealed until required. This will protect the cyclohexene from air and light, reduce the amount of chemical waste being generated, and also avoid contamination of the stock bottle.

### Additional information

Trying to find chemical compatibility information for cyclohexene is challenging. The Mykin rubber compatibility chart<sup>1</sup> indicates that cyclohexene is incompatible with many rubber-based products including neoprene, EPDM (ethylene propylene diene monomer) and SB (styrene butadiene). Fluoroplastics appear to be the most suitable for storing alkenes, although they might be quite expensive or difficult to source, and so therefore may not be practical for a school setting for a one-off application. Our sources indicate that there is insufficient data to determine the compatibility of silicone products with alkenes.

Information about incompatibilities with cyclohexane, another chemical commonly used alongside the cyclohexene, is reasonably easy to find and most of the standard dropper bottle materials are also unsuitable. These include natural rubber, latex and polypropylene. Low-density polyethylene is a suitable product to use. This would indicate that the disposable dropping pipettes would be suitable to use for short-term use.

### References and further information

1 Mykin Inc website, *Rubber chemical resistance chart*, <http://mykin.com/rubber-chemical-resistance-chart-2>

CP Lab Safety website, *Chemical Compatability Charts*, <https://www.calpaclab.com/chemical-charts/>

IPEX website. 2022. *Polypropylene Chemical Resistance Guide*, <https://ipexna.com/resources/document-repository/pp-chemical-resistance-...>

Vitlab website, 2023, *Fluoroplastic products*, <http://www.vitlab.com/en/products/knowledge/fluoroplastic-products/>

The Good Year Tire and Rubber Company. 2003. *Goodyear Chemical Resistance Charts. Appendix–Chemical Charts*, <http://www.hosecon.com/pdf/engineering/common/goodyearchemchart.pdf>

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