

May 2017

How to identify a substance that includes a stabilising solvent

Introduction

Diethyl peroxydicarbonate is manufactured as an 18 % solution in isododecane. Isododecane is a solvent added to stabilise diethyl peroxydicarbonate against its explosive properties.

Composition

The substance is manufactured with the following composition:

Constituents	Concentration range (%)	Typical concentration (%)
diethyl peroxydicarbonate	15 – 27	18
isododecane	73 – 85	82

According to the substance definition in REACH, solvents that may be separated without affecting the stability of the substance or changing its composition should not be considered as part of a substance.

However, in this case, isododecane is acting as a stabilising additive. Therefore, isododecane is regarded as part of the substance.

The substance should be registered as the solution with the lowest concentration of isododecane that guarantees safe handling (typically, 82 % (w/w)).

Identification

As stated in the *Guidance for identification and naming of substances under REACH and CLP*, additives contribute to the composition but not to the naming of a substance. Therefore, isododecane should be excluded from the naming, and the substance is named as a mono-constituent substance, as follows:

EC name: diethyl peroxydicarbonate
IUPAC name: 1,1'-[peroxybis(carbonyloxy)]diethane

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Reporting

Section 1.1 of IUCLID

Inventory	Inventory number	Inventory name
EC Inventory ...	238-707-3	diethyl peroxydicarbonate ...
CAS number	CAS name	
14666-78-5 ...		
IUPAC name		
1,1'-[peroxybis(carbonyloxy)]diethane		

Figure 1: Screenshot of IUCLID Section 1.1. Diethyl peroxydicarbonate is reported as the substance name in Section 1.1 of IUCLID.

Section 1.2 of IUCLID

Degree of purity ^

15 27 % (w/w) ...

Constituents ^

1,1'-[peroxybis(carbonyloxy)]diethane / 1,1'-[peroxybis(carbonyloxy)]diethane / 14666-78-5 / 238-707-3, 18.0 % (w/w), 15.0 - 27.0 % (w/w)

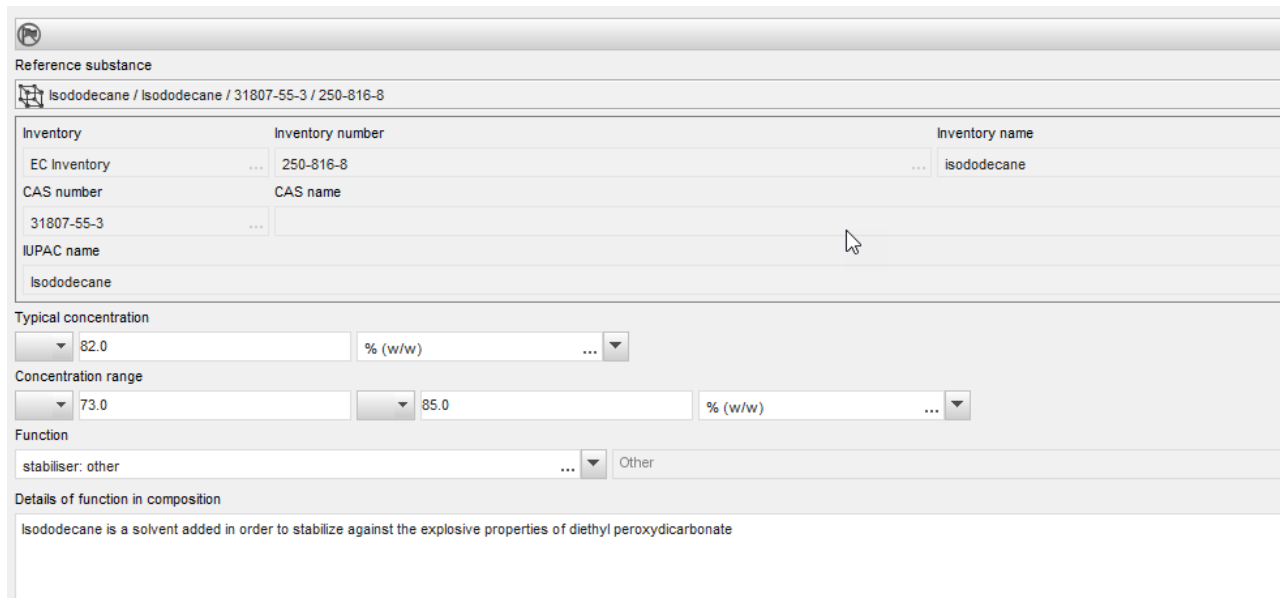
Impurities ^

Additives ^

Isododecane / Isododecane / 31807-55-3 / 250-816-8, 82.0 % (w/w), 73.0 - 85.0 % (w/w)

Figure 2: Screenshot of IUCLID Section 1.2. Diethyl peroxydicarbonate is reported as the (main) constituent and isododecane as an additive in Section 1.2 of IUCLID.

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Reference substance
Isododecane / Isododecane / 31807-55-3 / 250-816-8

Inventory	Inventory number	Inventory name
EC Inventory	250-816-8	isododecane

CAS number	CAS name
31807-55-3	

IUPAC name
Isododecane

Typical concentration
82.0 % (w/w)

Concentration range
73.0 - 85.0 % (w/w)

Function
stabiliser: other

Details of function in composition
Isododecane is a solvent added in order to stabilize against the explosive properties of diethyl peroxydicarbonate

Figure 3: Screenshot for additive. The stabilising function of isododecane is specified under the 'Additives' field.

Analytical information

All analytical work should be conducted on the substance with the same composition as the one reported in Section 1.2. In this case, that would mean a substance with the following composition:

- 15 – 27 % (w/w) diethyl peroxydicarbonate
- 73 – 85 % (w/w) isododecane

The analytical information is attached in the relevant fields of IUCLID Section 1.4.