Analysis of the most appropriate risk management option (RMOA)

Substance Name: 1,3-Propanesultone

EC Number: 214-317-9

CAS Number: 1120-71-4

Authority: ECHA at the request of the European Commission

Date: 02 February 2015

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1 IDENTITY OF THE SUBSTANCE

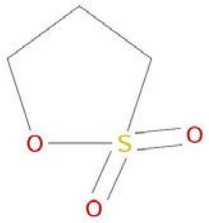
1.1 Other identifiers of the substance

Table 1: Other substance identifiers

EC name (public):	1,3-Propanesultone
IUPAC name (public):	1,2-oxathiolane 2,2-dioxide
Index number in Annex VI of the CLP Regulation	016-032-00-3
Molecular formula:	C3H6O3S
Molecular weight or molecular weight range:	122,1429
Synonyms: [1]	1,2-Oxathiolane-2,2-dioxide; 1,2-Oxathiolane-2,2-dione.

Type of substance ☒ Mono-constituent ☐ Multi-constituent ☐ UVCB

Structural formula:



[1] Please note this is a non-exhaustive list.

2 OVERVIEW OF OTHER PROCESSES / EU LEGISLATION

Table 2: Completed or ongoing processes

RMOA		☐ Published Risk Management Option Analysis (RMOA) other than this RMOA
REACH Processes	Evaluation	☐ Compliance check, Final decision
		☐ Testing proposal
		☐ CoRAP and Substance Evaluation
	Authorisation	☐ Candidate List
		☐ Annex XIV
	Restri -ction	☐ Annex XVII
Harmonised C&L		☒ Annex VI (CLP) (see section 3.1)
Processes under other EU legislation		☐ Plant Protection Products Regulation - Regulation (EC) No 1107/2009
		☐ Biocidal Product Regulation - Regulation (EU) 528/2012 and amendments
Previous legislation		☐ Dangerous substances Directive Directive 67/548/EEC (NONS)
		☐ Existing Substances Regulation - Regulation 793/93/EEC (RAR/RRS)
(UNEP) Stockholm convention (POPs Protocol)		☐ Assessment
		☐ In relevant Annex
Other processes/ EU legislation		☒ Other (provide further details below)

EU legislation that applies to classified CMRs category 1A/1B applies also to 1,3-propanesultone including occupational health and safety legislation, and restrictions for CMRs in entry 28 of REACH Annex XVII and in the Directive 2009/48/EC (Toy Safety Directive).

3 HAZARD INFORMATION (INCLUDING CLASSIFICATION)

3.1 Classification

3.1.1 Harmonised Classification in Annex VI of the CLP

Table 3: Harmonised classification

Index No	International Chemical Identification	EC No	CAS No	Classification		Spec. Conc. Limits, M-factors	Notes
				Hazard Class and Category Code(s)	Hazard statement code(s)		
016-032-00-3	1,3-propanesultone; 1,2-oxathiolane 2,2-dioxide	214-317-9	1120-71-4	Carc. 1B Acute Tox. 4 * Acute Tox. 4 *	H350 H312 H302	Carc. 1B; H350: C ≥ 0,01 %	-

3.1.2 Self classification

In the registrations and C&L Inventory the following additional self-classifications were provided:

Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 4 H332; Skin Irrit. 2, H315; Eye Dam. 1, H318; Muta. 2, H341; Aquatic Acute 3, H402; Aquatic Chronic 3, H412; Eye Irrit. 2, H319.

3.1.3 CLP Notification Status

Table 4: CLP Notifications

	CLP Notifications[2]
Number of aggregated notifications	9
Total number of notifiers	176

3.2 Additional hazard information

1,3-propanesultone meets the criteria of Article 57 (a) of Regulation (EC) 1907/2006 (REACH) owing to its classification as carcinogen 1 B[3].

[2] C&L Inventory database, http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database (accessed 03 November 2014)

[3] Classification in accordance with Regulation (EC) No 1272/2008 Annex VI, part 3, Table 3.1 List of harmonised classification and labelling of hazardous substances.

4 INFORMATION ON (AGGREGATED) TONNAGE AND USES[4]

4.1 Tonnage and registration status

Table 5: Tonnage and registration status

From ECHA dissemination site	
Registrations	☒ Full registration(s) (Art. 10) ☒ Intermediate registration(s) (Art. 17 and/or 18)
Total tonnage band for substance (excluding the volume registered under Art 17 or Art 18, or directly exported)	1-10 tpa

4.2 Overview of uses

According to the full registrations, this substance is used as an intermediate in the manufacture of fine and bulk chemicals. It is used as an intermediate in the manufacture of aqueous polyurethane dispersions and light sensitive dyes and manufacture of sulfopropylated substances. It is also being used as a laboratory reagent. These uses are out of the scope of authorisation.

Uses which appear to be in the scope of authorisation include formulation and use in the electrolyte fluid of lithium ion batteries.

Based on the tonnage information reported in the registrations, the main use of the substance appears to be as an intermediate.

[4] Registration information accessed 03 November 2014

Table 6: Uses

	Use(s)
Uses as intermediate	In the manufacture of fine and bulk chemicals; As a transported isolated intermediate 1,3-propansultone is used as a pre-product to manufacture aqueous polyurethane dispersions as well as pre-product for the manufacture of light-sensitive dyes for photographic and radiographic films; As an onsite isolated intermediate 1,3-propansultone is used to manufacture sulfopropylated substances by complete conversion with amines, mercaptanes, alcoholates and carboxylates.
Formulation	Formulation of mixtures (including electrolytes)
Uses at industrial sites	Laboratory reagent Use in the electrolyte fluid of lithium ion batteries
Uses by professional workers	
Consumer Uses	
Article service life	Use in batteries

4.3 Additional information

Based on information provided in the registrations, it appears that there is potential for exposure to workers from the uses of this substance, which the registrants recommend to address through specified conditions of use including various risk management measures. Information on alternatives and socio-economic consequences has not been gathered for this RMOA.

5. JUSTIFICATION FOR THE RISK MANAGEMENT OPTION

5.1 Need for (further) risk management

The substance is considered to be of potential relevance under the SVHC Roadmap (Table 7).

Table 7: SVHC Roadmap 2020 criteria

	Yes	No
a) Art 57 criteria fulfilled?	✓	
b) Registrations in accordance with Article 10?	✓	
c) Registrations include uses within scope of authorisation?	✓	
d) Known uses not already regulated by specific EU legislation that provides a pressure for substitution?	✓	

5.2 Identification and assessment of risk management options

REACH Candidate List and Authorisation

This substance is registered for uses within the scope of authorisation (i.e. formulation and the use of the substance in the electrolyte fluid of lithium ion batteries). The substance meets the relevancy criteria in the Roadmap (Table 7), and therefore the inclusion of the substance in the Candidate List for potential prioritization to Annex XIV could be considered. Based on the available information the volume in the scope of authorisation is likely to be low. This would potentially result in low priority for inclusion in Annex XIV.

5.3 Conclusion on the most appropriate (combination of) risk management option(s)

This substance is classified as carcinogenic Category 1B and therefore it fulfils the REACH Article 57 criteria. The substance is registered for uses within the scope of authorisation (e.g. formulation, and the use of the substance in the electrolyte fluid of lithium ion batteries) although its main use is as intermediate. Therefore, the substance will be proposed to be identified as a Substance of Very High Concern to be included in the Candidate List for potential prioritisation to Annex XIV.