Assessment of regulatory needs

Authority: European Chemicals Agency (ECHA)

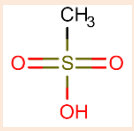
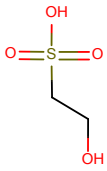
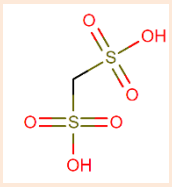
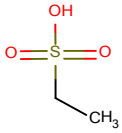
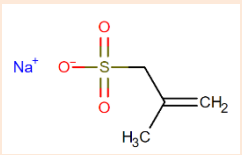
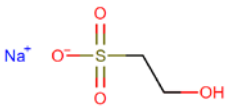
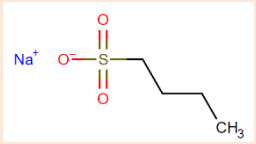
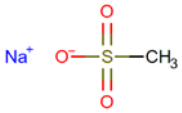
Group Name: Aliphatic sulfonic acids, hydroxyalkanesulfonic acids and their salts

General structure:-

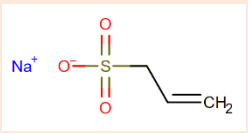
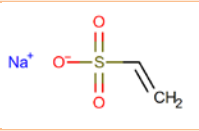
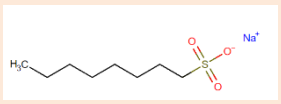
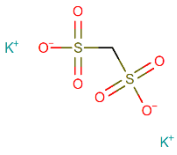
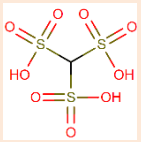
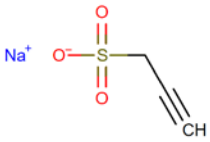
Revision history

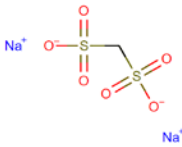
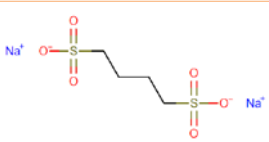
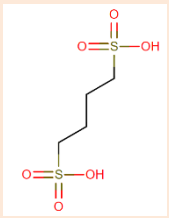
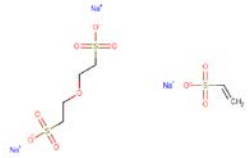
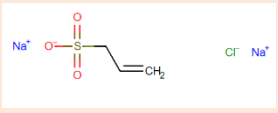
Version	*Date*	*Description*
1.0	14 February 2022	

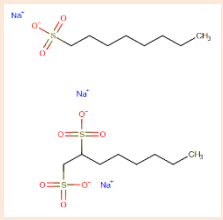
Substances within this group:

EC / List number	CAS number	Substance name [and / or Substance name acronyms]	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y) [1]
200-898-6	75-75-2	Methanesulphonic acid		Full, >1000
203-484-3	107-36-8	2-hydroxyethanesulphonic acid		Full, not (publicly) available
207-966-4	503-40-2	Methanedisulphonic acid		Full, not (publicly available)
209-843-0	594-45-6	Ethanesulphonic acid		OSII or TII
216-341-5	1561-92-8	Sodium 2-methylprop-2-ene-1-sulphonate		Full, 100-1000
216-343-6	1562-00-1	Sodium 2-hydroxyethanesulphonate		Full, >1000
219-201-1	2386-54-1	Sodium butane-1-sulphonate		C&L notifications
219-203-2	2386-57-4	Sodium methanesulphonate		Full, not (publicly) available

[1] Note that the total aggregated tonnage band may be available on ECHA's webpage at https://echa.europa.eu/information-on-chemicals/registered-substances

EC / List number	CAS number	Substance name [and / or Substance name acronyms]	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y) [1]
219-676-5	2495-39-8	Sodium prop-2-enesulphonate		Full, 100-1000
221-242-5	3039-83-6	Sodium ethylenesulphonate		Full, not (publicly) available
226-195-4	5324-84-5	Sodium octane-1-sulphonate monohydrate		Full, 10-100
228-543-0	6291-65-2	Dipotassium methanedisulphonate		Full, 1-10
259-097-5	54322-33-7	Methanetrisulphonic acid		Full, not (publicly) available
259-915-0	55947-46-1	Sodium 2-propyne-1-sulphonate		Full, not (publicly) available
270-407-8	68439-57-6	Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts	UVCB	C&L notifications
271-774-7	68608-15-1	Sulfonic acids, alkane, sodium salts	UVCB	OSII or TII
273-105-4	68937-98-4	Sulfonic acids, C14-18-alkane hydroxy and C12-20-alkapolyene and C14-18-alkene and C12-20-alkene hydroxy, sodium salts	UVCB	Full, not (publicly) available
288-492-5	85736-79-4	Sulfonic acids, C13-17-sec-alkane, compds. with triethanolamine	UVCB	Full, not (publicly) available

EC / List number	CAS number	Substance name [and / or Substance name acronyms]	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y) [1]
294-430-8	91722-28-0	Sulfonic acids, C16-18-alkane hydroxy and C16-18-alkene, sodium salts	UVCB	C&L notification
297-664-9	93686-15-8	Sulfonic acids, C16-alkane hydroxy and C16-alkene, sodium salts	UVCB	Full, not (publicly) available
307-055-2	97489-15-1	Sulfonic acids, C14-17-sec-alkane, sodium salts	UVCB	Full, not (publicly) available
406-440-3	-	XP-282		Full, not (publicly) available
485-220-9	-	[No public or meaningful name is available]	Not (publicly) available	NONs, not (publicly) available
609-262-6	36589-61-4	1,4-Butanedisulfonic acid, sodium salt (1:2)		OSII or TII
700-472-4	27665-39-0	Butane-1,4-disulfonic acid		OSII or TII
700-978-5	-	Reaction mass of disodium 2,2'-oxydiethanesulfonate and sodium ethenesulfonate		Full, not (publicly) available
701-087-4	2495-39-8	Reaction mass of sodium prop-2-enesulphonate and sodium chloride		Full, not (publicly) available
931-534-0	68439-57-6	Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts		Full, >1000
-	1474044-66-0	Sulfonic acids, C6-8-alkane, sodium salts		Full, not (publicly) available

EC / List number	CAS number	Substance name [and / or Substance name acronyms]	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t / y) [1]
947-381-8	-	Reaction product of propargyl chloride and sodium bisulfite		Full, not (publicly) available
948-034-3	-	Reaction mass of sodium octane-1-sulfonate and disodium octane-1,2-disulfonate		Full, not (publicly) available

This table contains also group members that are only notified under the CLP Regulation. However, the list is not necessarily exhaustive. Should further regulatory risk management action on one or more substances in the group be considered, ECHA may make an additional search for related C&L notified substances to be included in the group and develop an assessment of regulatory needs for them.

Contents

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The author does not accept any liability with regard to the use that may be made of the information contained in this document. Usage of the information remains under the sole responsibility of the user. Statements made or information contained in the document are without prejudice to any further regulatory work that ECHA, the Member States or other regulatory agencies may initiate at a later stage. Assessment of regulatory needs and their conclusions are compiled on the basis of available information and may change in light of newly available information or further assessment.

Foreword

The purpose of the assessment of regulatory needs of a group of substances is to help authorities conclude on the most appropriate way to address the identified concerns for a group of substances or a single substance, i.e. the combination of the regulatory risk management instruments to be used and any intermediate steps, such as data generation, needed to initiate and introduce these regulatory measures.

An assessment of regulatory needs can conclude that regulatory risk management at EU level is required for a (group of) substance(s) (e.g. harmonised classification and labelling, Candidate List inclusion, restriction, other EU legislation) or that no regulatory action is required at EU level. While the assessment is done for a group of substances, the (no) need for regulatory action can be identified for the whole group, a subgroup or for single substance(s).

The assessment of regulatory needs is an important step under ECHA's Integrated Regulatory Strategy. However, it is not part of the formal processes defined in the legislation but aims to support them.

The assessment of regulatory needs can be applied to any group of substances or single substance, i.e., any type of hazards or uses and regardless of the previous regulatory history or lack of such. It can be done based on a different level of information. A Member State or ECHA can carry out this case-by-case analysis. The starting point is available information in the REACH registrations and any other REACH and CLP information. However, a more extensive set of information can be available, e.g. assessment done under REACH/CLP or other EU legislation, or can be generated in some cases (e.g. further hazard information under dossier evaluation). Uncertainties associated to the level of information used should be reflected in the documentation. It will be revisited when necessary. For example, after further information is generated and the hazard has been clarified or when new insights on uses are available. It can be revisited by the same or another authority.

The responsibility for the content of this assessment rests with the authority that developed it. It is possible that other authorities do not have the same view and may develop further assessment of regulatory needs. The assessment of regulatory needs does not yet initiate any regulatory process but any authority can consequently do so and should indicate this by appropriate means, such as the Registry of Intentions.

For more information on Assessment of regulatory needs please consult ECHA website[2].

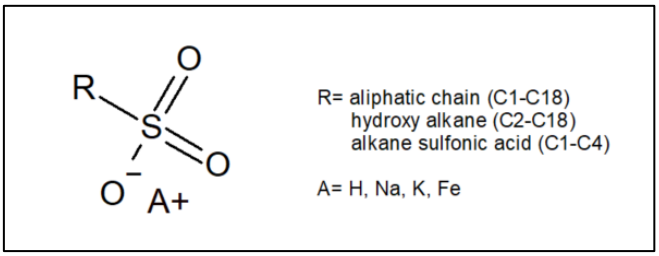
[2] https://echa.europa.eu/understanding-assessment-regulatory-needs

Glossary

ARN	Assessment of Regulatory Needs
CCH	Compliance Check
CLH	Harmonised classification and labelling
CMR	Carcinogenic, mutagenic and/or toxic to reproduction
DEv	Dossier evaluation
ED	Endocrine disruptor
NONS	Notified new substances
OEL	Occupational exposure limit
OSII or TII	On-site isolated intermediate or transported isolated intermediate
PBT/vPvB	Persistent, bioaccumulative and toxic/very persistent and very bioaccumulative
RMOA	Regulatory management options analysis
RRM	Regulatory risk management
SEv	Substance evaluation
STOT RE	Specific target organ toxicity, repeated exposure
SVHC	Substance of very high concern

1 Overview of the group

ECHA has grouped together structurally similar substances based on the presence of the of aliphatic sulfonic acid or hydroxyalkane sulfonic acid moieties and their related salts, as shown in the figure below.



Some of the aliphatic sulfonic acids have more than one sulfonic acid groups. The carbon chain length of the R group varies from very short (C1) to long (C18) in the different substances.

The group covers 21 well-defined substances and 10 substances of unknown or variable composition, complex reaction products or of biological materials (UVCBs). The variability of the UVCBs is mostly related to different carbon chain lengths present in the composition. Some of the substances have impurities of concern. These impurities are classified as STOT RE 1, Repr. 1B or Skin sens. 1.

There are 23 substances registered under Annex VII-X and four intermediate registrations. Also, there is 1 NONS and 3 substances for which C&L notifications have been submitted.

Based on information reported in the REACH registration dossiers, many substances in the group have widespread industrial, professional and consumer uses (including article service life). The uses take place in many areas with high potential for both exposure to workers and consumers and release into the environment including washing and cleaning, lubricants, coatings, cosmetics, biocidal products, textile dyeing.

Other substances in the group are mainly used at industrial sites in areas like metal and non-metal surface treatment, lubricant or catalyst. For those substances there is potential for exposure for workers and release to the environment.

A third group of substances is only used as intermediate or monomer. For those substances, low potential for exposure for workers and release into the environment is expected.

Note on the scope of ECHA's assessment of regulatory needs

Regarding hazards, the focus of ECHA's assessment is on CMR (carcinogenic, mutagenic and/or toxic to reproduction), sensitiser, ED (endocrine disruptor), PBT/vPvB or equivalent (e.g. substances being persistent, mobile and toxic), aquatic toxicity hazard endpoints and therefore only those are reflected in the table in section 3. This does not mean that the substances do not have other known or potential hazards. In some specific cases, where ECHA identifies a need for regulatory risk management action at EU level for other hazards (e.g. neurotoxicity, STOT RE), such additional hazards may be addressed in the assessment. An overview of classification is presented in Annex 1.

On the exposure side, ECHA is mainly using the information on uses reported in the registration dossiers (IUCLID) as a proxy for assessing the potential for exposure to humans and releases to the environment. The potential for release / exposure is generally considered high for "widespread" uses, i.e. professional and consumer uses and uses in articles. For these uses, normally happening at many places, the expected level of control is *à priori* considered limited. The chemical safety reports are not necessarily consulted and no quantitative exposure assessment is performed at this stage.

2 Justification for the no need for regulatory risk management action at EU level

Based on currently available information, there is no need for (further) EU regulatory risk management for all substances in the group.

Based on ECHA's assessment of currently available hazard information the substances in this group are unlikely to fulfil the PBT/vPvB screening or aquatic toxicity criteria. The substances are either readily or inherently biodegradable. In addition, the known Log Kow for this group are all below 4.5, indicating low potential for bioaccumulation.

It is concluded that there is unlikely hazard for human health for most substances in the group. This conclusion was already made in the OECD category 'Alkyl Sulfates, Alkane Sulfonates and alpha-Olefin Sulfonates' to which the long chain aliphatic sulfonic acids in the group belong to. The SIDS initial assessment profile[3] concluded low priority for further work on human health. However, more modern testing on some of the substances in the group indicated some effect on reproductive toxicity. Therefore, while based on the available information, it is still assumed that the observed effects on reproductive toxicity would not lead to any classification or need for EU RRM, this would need to be confirmed via ongoing and/or planned data generation via compliance check (CCH).

[3] SIDS INITIAL ASSESSMENT PROFILE (oecd.org) on category Alkyl Sulfates, Alkane Sulfonates and α-Olefin Sulfonates

Clarification of the hazard is important as many substances in the group have widespread uses, including use in articles, with high potential for exposure for professionals and consumers.

A few substances in the group have known or likely hazards and therefore require a more specific justification for the no need for regulatory risk management:

Three substances in the group (ECs/Lists 947-381-8, 273-105-4 and 700-978-5) are skin sensitisers, however, they are only used at industrial sites or at low volumes. Sufficient and consistent self-classification by registrants should require adequate risk management measures to be in place according to workplace legislation. Therefore, it is proposed that there is currently no need for EU-wide regulatory risk management.

According to the available information on the composition provided in (some) registration dossiers, 2 substances in the group potentially contain as constituent or impurity hazardous substances at concentrations above generic concentration limits under the CLP Regulation leading to the potential classification of the parent substances (EC 271-774-7 as Repr. 1B and EC 226-195-4 as STOT RE 1). Industry is invited to consider the information available and to update the registration dossiers accordingly. The Safety Data Sheets need also to be revised accordingly.

Though some exposure to the classified substance EC 226-195-4 is expected, the concentration in the final mixtures used by consumers and professionals is probably below the concentration limit. Additionally, EU regulatory risk management on an impurity classified as STOT RE 1 seems not to be proportionate in this case.

The substance EC 271-774-7 is used only as intermediate under strictly controlled condition, thus the potential for exposure and release into the environment is assumed to be low.

The identified hazards cannot be extrapolated to the other substances of the group as those either do not contain classified constituents above the concentration limit or available data show that the substances are not to be classified.

In conclusion, for all substances in the group no need for regulatory risk management action at EU level is proposed as they have either unlikely hazard for human health and environment, or where some human health hazard is likely or known, the exposure potential is limited.

3 Conclusions and actions

The conclusions and actions proposed in the table below are based on the REACH and CLP information available at the time of the assessment by ECHA. The main source of information is the registration dossiers. Relevant public assessments may also be considered. When new information (e.g. on hazards through evaluation processes, or on uses) will become available, the document will be updated and conclusions and actions revisited.

EC / List / CAS number	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Last foreseen action	Action
947-381-8	Known or potential hazard for skin sensitisation	No hazard or unlikely hazard	Used at industrial sites in metal surface treatment and coating. Potential for exposure for industrial workers.	**Currently no need for EU RRM** Justification: Harmonised/self-classification followed by implementation of necessary RRMs should be sufficient to ensure safe use at the workplace.	No action
273-105-4			Used in plant protection products at low volumes. Potential for exposure and release is low.	**Currently no need for EU RRM** Justification: According to the reported uses, low potential for exposure and release to the environment is expected. Harmonised/self-classification followed by implementation of necessary RRMs should be sufficient to ensure safe use at the workplace and adequate product labelling for professional use.	No action

EC/List/CAS number	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Last foreseen action	Action
700-978-5			Use as intermediate. Potential for exposure and release is low.	**Currently no need for EU RRM** Justification: According to the reported uses, low potential for exposure and release to the environment is expected. Harmonised/self-classification followed by implementation of necessary RRMs should be sufficient to ensure safe use at the workplace.	No action
271-774-7	Known or potential hazard for reproductive toxicity		Intermediate registration, potential for exposure and release is low.	**Currently no need for EU RRM** Justification: Given the low exposure potential, no EU wide regulatory risk management is proposed.	No action
200-898-6 **203-484-3** **207-966-4** **209-843-0** **216-341-5** **216-343-6** **219-201-1** **219-203-2** **219-676-5** **221-242-5** **226-195-4** **228-543-0**	No hazard or unlikely hazard Except for EC 226-195-4 with known or potential hazard for STOT RE		Several substances in the group have widespread uses with high potential for exposure for professionals and consumers, e.g. in washing and cleaning, lubricants, coatings, cosmetics. Other substances are only used at industrial sites in	**Currently no need for EU RRM** Justification: Overall, no or unlikely hazard that would lead to concern for the reported uses.	**First step:** CCH for 200-898-6, 307-055-2, 701-087-4, 931-534-0

EC/List/CAS number	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Last foreseen action	Action
259-097-5 **259-915-0** **270-407-8** **288-492-5** **294-430-8** **297-664-9** **307-055-2** **406-440-3** **485-220-9** **609-262-6** **700-472-4** **701-087-4** **931-534-0** **948-034-3** **1474044-66-0**			surface treatment or only as intermediates or monomers with limited exposure.		

Annex 1: Overview of classifications

Data extracted on 6 October 2021.

EC/ List No	Substance name	Harmonised classification	Classification in registrations
200-898-6	methanesulphonic acid	Skin Corr. 1B H314	Met. Corr. 1 H290 Acute Tox. 4 H302 Acute Tox. 4 H312 Skin Corr. 1B H314 Eye Damage 1 H318 STOT Single Exp. 3 H335, affected organs: respiratory system
203-484-3	2-hydroxyethanesulphonic acid	--	Skin Corr. 1 H314 Eye Damage 1 H318 Aquatic Chronic 3 H412 Skin Corr. 1B H314
207-966-4	methanedisulphonic acid	--	Skin Corr. 1B H314 Eye Damage 1 H318 Aquatic Chronic 4 H413
209-843-0	ethanesulphonic acid	--	Met. Corr. 1 H290 Skin Corr. 1 H314 Acute Tox. 4 H302 Eye Damage 1 H318 STOT Single Exp. 3 H335, affected organs: respiratory system Acute Tox. 4 H312
216-341-5	sodium 2-methylprop-2-ene-1-sulphonate	--	--
216-343-6	sodium 2-hydroxyethanesulphonate	--	--
219-201-1	sodium butane-1-sulphonate	--	--
219-203-2	sodium methanesulphonate	--	--

EC / List No	Substance name	Harmonised classification	Classification in registrations
219-676-5	sodium prop-2-enesulphonate	--	--
221-242-5	sodium ethylenesulphonate	--	--
226-195-4	sodium octane-1-sulphonate monohydrate	--	Skin Corr. 1B H314 Eye Damage 1 H318
228-543-0	dipotassium methanedisulphonate	--	--
259-097-5	methanetrisulphonic acid	--	--
259-915-0	sodium 2-propyne-1-sulphonate	--	Met. Corr. 1 H290
270-407-8	Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts	--	--
271-774-7	Sulfonic acids, alkane, sodium salts	--	Eye Irrit. 2 H319 Skin Irrit. 2 H315
273-105-4	Sulfonic acids, C14-18-alkane hydroxy and C12-20-alkapolyene and C14-18-alkene and C12-20-alkene hydroxy, sodium salts	--	Acute Tox. 4 H302 Eye Damage 1 H318 Skin Sens. 1B H317 Aquatic Chronic 3 H412
288-492-5	Sulfonic acids, C13-17-sec-alkane, compds. with triethanolamine	--	Met. Corr. 1 H290 Skin Corr. 1 H314 Acute Tox. 4 H302 Eye Damage 1 H318 STOT Single Exp. 3 H335, affected organs: respiratory system Acute Tox. 4 H312
294-430-8	Sulfonic acids, C16-18-alkane hydroxy and C16-18-alkene, sodium salts	--	--
297-664-9	Sulfonic acid, C16-alkane hydroxy and C16-alkene, sodium salts	--	Skin Irrit. 2 H315 Eye Damage 1 H318
307-055-2	Sulfonic acids, C14-17-sec-alkane, sodium salts	--	Acute Tox. 4 H302, specific concentration: >60 Skin Irrit. 2 H315, specific concentration: >60;>10-<=15;>15-<=60

EC / List No	Substance name	Harmonised classification	Classification in registrations
			Eye Damage 1 H318, specific concentration: >60;>15-<=60 Aquatic Chronic 3 H412
406-440-3	XP-282		--
485-220-9	[No public or meaningful name is available]		not available
609-262-6	1,4-Butanedisulfonic acid, sodium salt (1:2)	--	--
700-472-4	butane-1,4-disulfonic acid	--	Skin Corr. 1B H314
700-978-5	Reaction mass of disodium 2,2'-oxydiethanesulfonate and sodium ethenesulfonate	--	--
701-087-4	Reaction mass of sodium prop-2-enesulphonate and sodium chloride	--	--
931-534-0	Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts	--	Skin Irrit. 2 H315, specific concentration: >5-<=38;>38;>=5 Eye Damage 1 H318, specific concentration: >38
--	Alkane C6-C8 (even numbered), 1-sulphonic acid, sodium salt	--	Acute Tox. 4 H302 Skin Irrit. 2 H315 Eye Irrit. 2 H319
947-381-8	Reaction product of propargyl chloride and sodium bisulfite		Met. Corr. 1 H290 Skin Sens. 1A H317
948-034-3	Reaction mass of sodium octane-1-sulfonate and disodium octane-1,2-disulfonate	--	Skin Corr. 1B H314 Eye Damage 1 H318

(*) the number in brackets indicates the number of notifications received. Each notification can represent a group of notifiers, therefore the number may differ from the C&L inventory which displays number of notifiers.

Annex 2: Overview of uses based on information available in registration dossiers

Data extracted on 6 October 2021.

Main types of applications structured by product or article types	List 931-534-0	CAS 1474044-66-0	EC 288-492-5	EC 307-055-2	List 701-087-4	EC 200-898-6	EC 221-242-5	EC 226-195-4	EC 297-664-9	EC 216-343-6	List 948-034-3
Intermediate	I, **P**			I	F, I	I	I, **P**			F, I	
Metal surface treatment products	I		F, I		F, I, **P**	F, I, **P**					
Non-metal-surface treatment products			F, I, **P**		F, **P**						
Heat transfer fluids and Hydraulic fluids		F, I, **P**									
Ink and toners	F, I, **P, C**	F, I, **P**									
Adhesives, sealants	I										
Products such as ph-regulators, flocculants, precipitants, neutralisation agents	F, I	F, **P**	F	F, I	F, I, **P**	I, **P**					
Leather treatment products	F, I, **P, C**			F, I							
Lubricants, greases, release products	F, I, **P, C**	F, I, **P, C**	F, I	F, I		**C**					
Metal working fluids	F, I, **P**	F, I, **P**	F, I	I	F, I, **P**						
Paper and board treatment products		F, I, **P, A**									
Plant protection products	F, I, **P, C**										
Perfumes, fragrances	F, I, **C**										
Pharmaceuticals	I, **P**										
Air care products	**C**	F, **C**				**C**		F	**C**		
Photo-chemicals		F, I									
Polishes and wax blends	**P, C**	F, **P, C**		**P**				F			
Polymer preparations and compounds	F, I, **(A)**	**A**		I, A	F			I			
Textile dyes, and impregnating products	F, I, **A**			F, I			F, I, **C**				

Main types of applications structured by product or article types	List 931-534-0	CAS 1474044-66-0	EC 288-492-5	EC 307-055-2	List 701-087-4	EC 200-898-6	EC 221-242-5	EC 226-195-4	EC 297-664-9	EC 216-343-6	List 948-034-3
Washing and cleaning products	F, I, **P, C**	F, I, **P, C**	F, I, **P, C, A**	F, I, **P, C**		F, I, **P, C**		F, **P, C**	F		**P, C**
Water softeners	**C**		F								
Water treatment chemicals	I		I, **P, C**		F, I, **P**						
Welding and soldering products, flux products					F, I, **P**						
Cosmetics, personal care products	F, **P, C**		F, I, **C**	F, **C**			**P**		F, **C**	F, **C**	
Anti-freeze and de-icing products						**C**					
Extraction agents							**C**				
Biocidal products	I, **P, C**	F, I, **P, C**		**P**				F			
Coatings and paints, thinners, paint removes	F, I, **P, C**	F, I, **P**			F, I, **P**		I, **C**				
Fillers, putties, plasters, modelling clay	I, **C**	F									
Finger paints	**C**	F									
Construction chemicals not mentioned elsewhere	F, I, **P, A**	**A**				**P**					
Oil and gas exploration or production products		I				I					
Electrolytes for batteries	I										
Use in medical devices	**P**										
Use in textiles, leather, fur	I, **P**										

F: formulation, I: industrial use, P: professional use, C: consumer use, A: article service life; P, C and A are highlighted in red to indicate widespread use with potential for exposure/release.

Main types of applications structured by product or article types	EC 228-543-0	EC 203-484-3	EC 207-966-4	List 406-440-3	List 947-381-8	EC 219-203-2	EC 259-097-5	EC 273-105-4	EC 259-915-0
Metal surface treatment products	F, I, **P**	F, I	F, I	F, I	I				
Non-metal-surface treatment products	F, I	F, I		F, I					
Heat transfer fluids	I								
Intermediate		I							F, I
Lubricants, greases, release products						F, (I)			
Plant protection products								F, **(P)**	(F), **(P)**
Pharmaceuticals									(F), (I,) **(C)**
Coatings and paints, thinners, paint removes					I				
Chemical synthesis as catalyst							I		

F: formulation, I: industrial use, P: professional use, C: consumer use, A: article service life; P, C and A are highlighted in red to indicate widespread use with potential for exposure/release. Brackets indicate uncertain (not confirmed in registration dossier), but possible use.

Main types of applications structured by product or article types	List 700-978-5	EC 209-843-0	EC 216-341-5	EC 219-676-5	EC 271-774-7	List 609-262-6	List 700-472-4
Intermediate	F, I	I	I	I	I	I	I
Polymer preparations and compounds			I				

F: formulation, I: industrial use, P: professional use, C: consumer use, A: article service life; P, C and A are highlighted in red to indicate widespread use with potential for exposure/release.

Annex 3: Overview of completed or ongoing regulatory risk management activities

Data extracted on 6 October 2021.

There are no relevant completed or ongoing regulatory risk management activities for any of the substances.