Assessment of regulatory needs

Authority: European Chemicals Agency (ECHA)

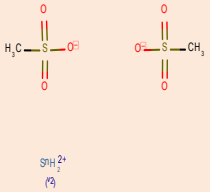
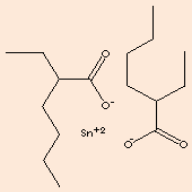
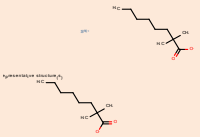
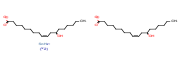
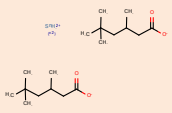
Group Name: Organic inorganic tin compounds without hydrocarbyl substituent

General structure: -

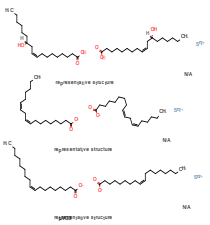
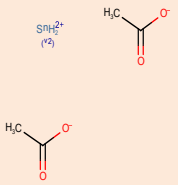
Revision history

Version	*Date*	*Description*
1.0	11 September 2023	

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]
401-640-7	53408-94-9	Tin(II) bis(methanesulfonate)		Full, 100-1000
610-996-4	53408-94-9	Tin methane sulfonic acid	Not provided (401-640-9)	Not registered
206-108-6	301-10-0	tin bis(2-ethylhexanoate)		Full, 100-1000
212-414-0	814-94-8	tin(II) oxalate		Full, 100-1000
256-370-0	49556-16-3	tin(2+) neodecanoate	UVCB 	Full, 1-10
439-600-6		Reaction product of ricinoleic acid with tin(II)oxide		NONS
700-567-0		Hexanoic acid, 3,5,5-trimethyl-, tin(2+) salt (2:1)		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]
700-814-2		Reaction products of ricinoleic acid and linoleic acid and oleic acid with sodium hydroxide and tin (II) chloride	UVCB 	Full, not (publicly) available
211-335-9	638-39-1	tin di(acetate)		C&L notification

This table contains group members that are only notified under the CLP Regulation, however, the list is not necessarily exhaustive.

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 assessment of regulatory needs of a group of substances is an iterative, informal process to help authorities consider the most appropriate way to address an identified concern for a group of substances or a single substance and decide whether further regulatory risk management activities are necessary.

The grouping is mainly based on structural similarity and associations made by the registrants between substances through read-across and category approaches as well as category associations from external sources (e.g. OECD categories) . These methods are different from grouping as defined in Section 1.5 of Annex XI to REACH because the scope and intended use of ECHA's grouping is different. Thus, in this context, grouping does not aim to validate read-across and category approaches according to the Annex XI requirements but rather to support a faster and more consistent approach for regulating chemicals and avoid regrettable substitution.

The focus of the assessment is largely based on information available in the registration dossiers and on properties requiring regulatory risk management action at EU level . The information reported on uses is from the registration dossiers (IUCLID) and is used as a proxy for assessing how widespread uses are and whether potential for exposure to humans and releases to the environment can be expected. The chemical safety reports are not necessarily consulted and no quantitative exposure assessment is performed at this stage.

The outcome of these assessments are proposals for immediate (the first action) and subsequent regulatory action(s), including the foreseen ultimate regulatory action (last foreseen regulatory action) to address the identified concern(s) in case the potential hazards are confirmed. For example, further data generation through compliance check is suggested as a first action, to confirm the identified hazard.

Where hazards are confirmed, regulatory risk management actions could be considered for the whole group, for a subgroup or for individual substances within the group. The robustness of the group depends on the stage of assessment and the level of certainty this stage requires. For example, the needs for grouping under restriction may differ from the needs for grouping for the purpose of harmonised classification. Group membership is reconsidered accordingly throughout the iterative assessment of regulatory needs, for example, after further information is generated and the hazard has been clarified or when new insights on uses and risks are available.

The assessment of regulatory needs in itself does not represent a regulatory action, but rather a preparatory step to consider further possible regulatory actions at the level of individual substances or groups/subgroups of substances.

Publication of ARNs makes it easier for companies to follow the latest status of their substances of interest, anticipate potential regulatory actions and make strategic choices in their chemicals portfolio.

For more information on assessments of regulatory needs please consult ECHA's 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 element tin with organic counterparts but with the absence of Tin-C covalent bonds. Substances in this group are mainly salts and for some of the substances also with a partial coordination of the central tin atom with the ion or a functional group of the organic molecule, however resulting in water in the dissociation of the organic (anionic) moiety of respective carboxylic acids, and the inorganic cation tin that occurs, initially, as Sn(II). However the chemistry of tin(II) in aqueous solution is dominated by both the very strong hydrolysis at pH $\geqslant$ 2 and the formation of scarcely soluble species.

Specific scientific experimental activities[i] published and reviewed in literature, demonstrated that tin(II) ions in aqueous solution tend to form hydrolytic species at pH>3. Sparingly soluble species, such as $Sn(OH)_{2(s)}$, are also often formed in water. Additional information gathered in various natural fluids could demonstrate the behaviour of inorganic speciation of tin(II), particularly for solutions containing chloride, fluoride, sulphate, carbonate and phosphate. It was found that carbonate, phosphate and at minor extent sulphate, chloride and fluoride show high binding abilities with the formation of complex inorganic species in all types of natural fluids.

Six of the nine substances listed are registered. Based on information reported in the REACH registration dossiers, the substances in the group have industrial, professional and consumer uses mainly in polymers, coating, ink, fillers and putties as a catalyst. Article service life is also reported for polymers and coatings, but there are uncertainties due to the technical functions of the substances. There is high potential of exposure to workers and consumers from uses such as coatings, fillers and putties and adhesives and high potential of releases to the environment from use in washing and cleaning for one substance.

2 Conclusions and actions

The conclusions and actions proposed in the table below are based mainly on the REACH and CLP information available at the time of the assessment by ECHA. The conclusions are preliminary suggestions from a screening-level assessment done by ECHA with the aim to propose the next steps for further work (e.g., strengthening of the hazard conclusions, clarification of the uses and/or potential for exposure). 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 may be updated, and conclusions and actions revisited.

Subgroup name, EC / list no, substance name	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Suggested regulatory actions
206-108-6	Known or potential hazard for reproductive toxicity for skin sensitisation	Known or potential hazard for aquatic toxicity	Widespread industrial, professional and consumer uses in washing and cleaning, polymers, adhesives, coatings, ink and toners with high potential for exposure to workers and consumers. High potential for releases to the environment from the use of washing and cleaning products.	**Potential last action:** Restriction <u>Justification:</u> The harmonised classification as CMR 1B – reproductive toxicity would trigger the restriction entry 30 and by that ensure that the substances are not included in consumer mixtures above the limits specified in that entry. The reported professional uses are widespread (at many sites and many users) with relatively low levels of operational controls and risk management measures but with often frequent exposures with a long duration. Restriction of professional uses is preferred over authorisation as it is considered to be more efficient and effective to introduce controls at the level of placing on the market rather than at the level of uses.

Subgroup name, EC / list no, substance name	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Suggested regulatory actions
700-567-0 212-414-0 256-370-0 401-640-7 439-600-6 (**inactive registration**) 700-814-2	Known or potential hazard for skin sensitisation for reproductive toxicity category 2 for 700-567-0 (CLH proposal for reproductive toxicity category 1B ongoing) Inconclusive hazard for respiratory sensitisation for 212-414-0	Known or potential hazard for aquatic toxicity for 401-640-7, 439-600-6 and 700-814-2. Inconclusive hazards for 212-414-0.	700-567-0: Industrial uses in polymers and potential article service life. Low exposure potential for industrial and professional workers as well as consumers. 212-414-0: industrial uses in washing and cleaning, pharmaceuticals, polishes and wax blends, metal and non-metal surface treatment products, polymer, adhesives, coatings, ink and toners, paper and board treatment products and textile dyes. Potential exposure for workers. Consumer exposure via articles cannot be excluded. 256-370-0, 401-640-7, 439-600-6 and 700-814-2: industrial	**First step:** CCH for 212-414-0 For the other substances: No action **Potential next steps** for EC 212-414-0 **(if hazard confirmed):** **Potential last action:** No action <u>Justification:</u> Mainly industrial uses. Potential exposure for professional workers and consumers but low tonnage registrations. Harmonised/self-classification followed by implementation of necessary RRMs should be sufficient to ensure safe use by workers at industrial settings

Subgroup name, EC / list no, substance name	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Suggested regulatory actions
			uses in processing aid products, polymers, adhesives, non-metal and metal surface treatment products, fillers, coatings, welding and soldering, semiconductors and laboratory chemicals and intermediate. 256-370-0, 439-600-6 professional and consumer uses in polymers, adhesives, fillers and coatings well as article service life in polymers, adhesives, fillers and coatings. Potential exposure for workers and consumers.	
211-335-9 610-996-4	Known or potential hazard for skin sensitisation	No hazard or unlikely hazard.	No relevant registered uses. Low potential for exposure.	**Potential last action:** No action <u>Justification:</u> C&L notified substances without registered uses and likely negligible exposure

3 Justification for the need for regulatory risk management action at EU level

Suggested regulatory risk management action for EC 206-108-6 if **reproductive toxicity hazards is confirmed**.

Based on currently available information, there is a potential hazard for reproductive toxicity. EC 206-108-6 (tin bis(2-ethylhexanoate)) is self-classified as Repr. 2 H361d since it can release 2-ethylhexanoic acid (EC 205-743-6), a substance with a harmonised classification for developmental toxicity currently as Repr. 2 H361d (and as Repr. 1B H360D as of 23 November 2023, following the 18th ATP to Annex VI of the CLP Regulation). EC 206-108-6 is covered by the CLH entry for 2-ethylhexanoic acid (EC 205-743-6) and its salts and similar classifications should be applied to both.

As for all other substances in the group, EC 206-108-6 is considered as likely skin sensitiser.

As tin hydroxide and oxide are inorganic metal compounds, PBT and PMT hazard assessments are not applicable. Therefore, only the properties of well-soluble anionic moieties of acid salts (organic parts) are the primary determinants of hazards for these substances in the environment (see section 4.2.1.1). From environmental hazard side the organic moiety of EC 206-108-6 is unlikely to fulfil the PBT/vPvB screening criteria, because it is very likely readily biodegradable, has a low potential for bioaccumulation and is unlikely to fulfil the T criterion based on both available ecotoxicity and toxicity data. The substance shows aquatic toxicity and is self-classified as Aquatic Chronic 2.

Considering uses and exposure, EC 206-108-6 has been registered for industrial, professional and consumer uses and article service life. As a default assumption there is high potential for exposure for professional workers and consumers from most of the registered uses such as coatings, adhesives, fillers and putties and ink and toners. In addition, the registrations indicate worker activities in professional uses including spraying (PROC 11), rolling (PROC 10) and dipping (PROC 13) where there is high potential for exposure. Moreover, the substance has been registered for these uses in tonnages exceeding 10 tonnes per year while the highest aggregated tonnage for the substance considering all uses is up to 1000 tonnes per year.

In conclusion, the substance EC 206-108-6 is reprotoxic and has wide dispersive uses by professionals. Consequently, while the substance shall have a CLH as Repro 1 in force from 23rd November 2023 onwards, which should protect consumers and workers via restriction entry 30 and the Carcinogens, Mutagens or Reprotoxic substances Directive 2004/37/EC, we propose restriction as the final regulatory action to ensure sufficient level of protection for professional workers.

CLH

i) will require company level risk management measures (RMM) under the OSH legislation for workers, to be in place, ii) is needed or highly recommended for further regulatory processes under REACH and iii) is a prerequisite to restrict the presence of the substances in consumer mixtures, by means of the restriction entry 30.

Although CLH should be sufficient to protect workers and consumers, for this substance there are wide dispersive professional uses for which the harmonised classification alone may be insufficient. The following professional uses: adhesives,

fillers, putties, coatings and ink and toners are expected to be widespread (at many sites and by many users). Professional use is often widespread with relatively low levels of operational controls and risk management measures but with often frequent exposures with a long duration. In addition, professional users may be self-employed and therefore not covered by occupational safety and health (OSH) legislation.

Consumers may be co-exposed to the substances used by professionals in building and construction work.

Therefore, a **restriction of the substance as such or in mixtures (concentration limit in mixtures) used by professionals** is suggested after CLH.

Restriction of professional uses is preferred over authorisation as it is considered to be more efficient and effective to introduce controls at the level of placing on the market rather than at the level of uses.

Moreover, potential exposure from articles needs further investigation. The need for restricting substances in articles used by professionals or consumers reported for substance EC 206-108-6 should be considered in the context of the restriction of professional uses.

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

From the available data, all substances in the group are potential skin sensitisers but unlikely to have the following human health hazards: carcinogenicity, mutagenicity, reproductive and developmental toxicity (except EC 206-108-6, see above, and List 700-567-0), repeated dose toxicity or endocrine disruption.

All substances are self-classified as Skin sens 1/1A/1B based on human data, *in vivo* studies read-across with sensitising analogues. In addition, EC 401-640-7 has a harmonised classification as Skin sens. 1. As described for other groups of tin compounds, the skin sensitisation hazard seems linked to the tin moiety of the substances and therefore considered relevant to all group members since all substances in the group are expected to release tin ion upon hydrolysis. However, other hazards from the tin moiety are considered unlikely. There is an ongoing Substance Evaluation process on tin(II) sulphate (EC 231-302-2) by FR MSCA for initial mutagenicity and carcinogenicity concerns. However, these hazards could not be confirmed by the *in vivo* studies requested. Compliance check on this substance is still proposed to be opened to address PNDT2 and possibly EOGRTS data gaps to confirm the absence of reproductive and developmental hazard.

The hydrolysis products coming from the non-tin part of the substances have also been assessed in other groups of substances and have overall been concluded as of low toxicity. Further data generation is ongoing for most of them and should allow to confirm the absence of hazard or their low toxicity potential, which can be extrapolated to the parent compounds in the present group.

As already mentioned, the PBT and PMT are not applicable to inorganic moieties (tin hydroxide and oxide).

The substances in this group (anionic moieties of acid salts, i.e. the organic parts) are unlikely to fulfil the PBT/vPvB screening criteria, because they are very likely readily biodegradable, have a low potential for bioaccumulation and are unlikely to fulfil the T criterion. Substances from this group are adsorptive which indicates reduced mobility in sediment/soil. On that basis also the PMT concern is not

expected. These conclusions are based on ready biodegradability test results, log logKow, logKoc, QSAR-estimated logKoa and experimental data for the group members present in the dossiers.
The following substances show aquatic toxicity and are self-classified: 439-600-6 (Aquatic acute 1, inactive registration), List 700-814-2 (Aquatic Chronic 2). EC 401-640-7 has harmonised classification as Aquatic Chronic 2. The remaining group members are not classified for environmental hazards. However, compliance check is proposed to confirm low hazard for 212-414-0, as the entire fate and aquatic toxicity dataset of this substance is either waived or based solely on QSAR estimations.

No data is available to assess ED properties of these group members in the environment but based on the HH assessment no such concern is concluded.

The substance List 700-567-0 (self-classified as Repr. 2) was registered up to 100 tons per year with one use in polymers with industrial uses as well as article service life with the articles being used by both professionals and consumers. Nonetheless, due to the nature of use of the substance as indicated by registrations, it is unlikely it will end up in articles. In addition, the industrial uses in the registrations suggest low exposure for industrial workers.

For industrial and professional uses, it is expected that (following data generation) registrants would adequately self-classify the substances and implement necessary RMMs to ensure safe use at the workplace. In addition, a harmonised classification as Reprotoxic cat.2 would not impact any known legislations based on the uses of the substances. In addition, the exposure potential of the substance is low. Nonetheless, ES has registered the intention to submit a CLH proposal for 3,5,5-trimethylhexanoic acid and its salts as Repr. 1B H360FD by December 2023. Therefore, substance 700-567-0 may be covered by a potential CLH entry of the mentioned group in the future. Therefore, no EU additional regulatory risk management action is currently proposed for 700-567-0 at this stage.

The substance EC 212-414-0 was self-classified as a respiratory sensitiser by one registrant (out of seven) and is a skin sensitiser. However, the appropriateness of the self-classification for respiratory sensitisation cannot be confirmed based on the limited data reported in the dossier. EC 212-414-0 has been registered at high tonnages to industrial uses in washing and cleaning, pharmaceuticals, polishes and wax blends, metal and non-metal surface treatment products, polymer, adhesives, coatings, ink and toners, paper and board treatment products and textile dyes. In addition, it has widespread article uses in vehicles, machinery, mechanical appliances, electrical/electronic articles, electrical batteries and accumulators, plastic, rubber and wood articles, and textiles. Specific article types where the substance is used include, toys, building materials, flooring, furniture, curtains, foot-wear, leather products, paper and cardboard products, electronic equipment. Uses, such as coatings, washing and cleaning and widespread use of articles with activities such as roller application and brushing (PROC 10) and high (mechanical) energy work-up of substances bound in materials and/or articles (PROC 24) by industrial workers, suggest by default high potential for worker exposure and releases to the environment. Moreover, exposure to consumers via articles cannot be excluded although there are uncertainties due to the lack of data. Nonetheless, the low vapor pressure (0.0000229 Pa at 25 °C) of the substance suggests potentially low inhalation exposure via evaporation. Information from the Gestis database indicates that many countries have an eight-hour limit value of 2 mg/m^3 for inorganic tin compounds. In contrast, the registered worker activities including pelletisation, granulation, roller application and brushing and high (mechanical) energy work up suggest potential exposure via released inhalable particles either

from the use of the substance as such or in articles cannot be excluded. Moreover, based on the available information there is potential chronic exposure to consumers via article uses such as textile dyes in textile articles. While there are uncertainties concerning consumer exposure via articles and true, quantified inhalation exposure of the substance to workers, based on the information used in this work exposure cannot be excluded.

While addressing respiratory sensitisation effects is a priority, currently no EU-wide regulatory risk management is proposed due to uncertainties in the respiratory sensitisation hazard and correct classification of skin sensitisation which should be sufficient to protect industrial workers for skin sensitisation. ECHA recommends the industry to monitor the workers' health with possible early signals of respiratory sensitisation.

The substances EC/List 256-370-0, 401-640-7, 439-600-6 and 700-814-2 have skin sensitisation hazards. From these 401-640-7 has only industrial uses and the 700-814-2 only formulation uses thus exposure is likely low or controlled and correct self-classification is considered sufficient to ensure good level of protection from the use of skin sensitising substances. In contrast, the substances 256-370-0 and 439-600-6 have wide and dispersive professional and consumer uses and article service life in polymers, adhesives, coatings and fillers and putties. While for uses such as adhesives and coatings exposure potential for workers and consumers is considered high, it should be noted that EC 256-370-0 has been registered at low tonnages and the registration of EC 439-600-6 is currently inactive. In conclusion, despite the skin sensitisation hazard and exposure potential for consumers and professional workers, no regulatory action is proposed for EC/List 256-370-0, 401-640-7, 439-600-6 and 700-814-2 since correct classification is regarded as sufficient protection. In addition, considerations how to address skin sensitising substances is currently under consideration and other measures may be taken in the future.

For industrial and professional uses, sufficient and consistent self-classification by registrants should require adequate risk management measures to be in place according to workplace legislation.

Adequate product labelling should in principle provide consumers with sufficient information to manage risks arising from the use of mixtures containing substances EC/List 256-370-0, 401-640-7, 439-600-6 and 700-814-2.

Therefore, it is proposed that there is currently no need for EU-wide regulatory risk management.

However, there is a concern related to skin sensitisers (potentially) present in consumer mixtures and the need to further investigate whether further regulatory actions are needed and what would be the best options to address this concern.

Such concern has already been identified in other groups of substances and was brought for further discussion to Member States. Work is ongoing on this generic issue by both Member States and ECHA which may affect the regulatory actions on substances in this group.

It is worth noting however that the regulatory strategy may need to be revisited and need for further regulatory action reconsidered if there is a change in the registration status or reported uses for any of these substances.

Annex 1: Overview of classifications

Data extracted on 23.01.2023

EC / List No	CAS No	Substance name	Harmonised classification	Classification in registrations
206-108-6	301-10-0	tin bis(2-ethylhexanoate)	-	Eye Damage 1 H318 [Article 10 (inactive)] Aquatic Chronic 3 H412 [Article 10 (inactive)] Repr. 2 H361 [Article 10 (inactive)] Skin Sens. 1B H317 [Article 10 (inactive)]
211-335-9	638-39-1	Tin di(acetate)	-	-
212-414-0	814-94-8	tin(II) oxalate	-	Acute Tox. 4 H332 Skin Corr. 1C H314 Eye Damage 1 H318 Resp. Sens. 1 H334 Skin Sens. 1 H317 STOT Rep. Exp. 2 H373, affected organs: cardiovascular / hematological: other STOT Rep. Exp. 1 H372, affected organs: respiration tract, kidney
256-370-0	49556-16-3	tin(2+) neodecanoate	-	Skin Corr. 1 H314 Eye Damage 1 H318 Skin Sens. 1B H317
401-640-7	53408-94-9	Tin(II) bis(methanesulfonate)	Index number: 050-018-00-8 Acute Tox. 4 Hazard Statement: H302 (Minimum classification) Hazard Category: Skin Corr. 1B Hazard Statement: H314 Aquatic Chronic 2 Statement: H411 Skin Sens. 1 Statement: H317	Acute Tox. 4 H302 Skin Corr. 1B H314 Eye Damage 1 H318 Skin Sens. 1 H317 Aquatic Chronic 2 H411
439-600-6		Reaction product of ricinoleic acid with tin(II)oxide	-	Aquatic Acute 1 H400 [Article 10 (inactive)] Skin Irrit. 2 H315 [Article 10 (inactive)]

EC / List No	CAS No	Substance name	Harmonised classification	Classification in registrations
				Skin Sens. 1 H317 [Article 10 (inactive)]
610-996-4	53408-94-9	Tin methane sulfonic acid		
700-567-0		Hexanoic acid, 3,5,5-trimethyl-, tin(2+) salt (2:1)	-	Acute Tox. 4 H302 Eye Damage 1 H318 Skin Sens. 1B H317
700-814-2		Reaction products of ricinoleic acid and linoleic acid and oleic acid with sodium hydroxide and tin (II) chloride	-	Skin Sens. 1A H317 Aquatic Chronic 2 H411

(*) 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 10/11/2022.

Main types of applications structured by product or article types	EC / List 206-108-6	EC / List 212-414-0	EC / List 256-370-0	EC / List 401-640-7	EC / List 439-600-6	EC / List 700-567-0	EC / List 700-814-2
PC 20: Products such as pH-regulators, flocculants, precipitants, neutralisation agents	F, I			F, I	F, I		
PC 35: Washing and cleaning products	I, **P**	F, I					
PC 29: Pharmaceuticals		I					
PC 31: Polishes and wax blends		F, I					
PC 15: Non-metal-surface treatment products		F, I, **A***		F, I			
PC 32: Polymer preparations and compounds	F, I, **P**, **C**, **A**	F, I, **A***	F, **P**, **C**		F, I, **P**, **C, A***	F, I, **A***	F
PC 1: Adhesives, sealants	F, I, **P**, **C**	F, I, **A***	F, I, **P**, **C**		F, I, **P**, **C**		
PC 9b: Fillers, putties, plasters, modelling clay	F, I, **P**, **C**				F, I, **P**, **C**		
PC 9a: Coatings and paints, thinners, paint removes	F, I, **P**, **C**	F, I, **A***	F, I, **P**, **C**, **A**		F, I, **P**, **C**		
PC 18: Ink and toners	I, **P**	I					
PC 26: Paper and board treatment products		F, I					
PC 34: Textile dyes, and impregnating products		F, I, **A***					
PC 14: Metal surface treatment products		F, I, **A***		F, I			
PC 38: Welding and soldering products, flux products				I			
PC 33: Semiconductors				I			
PC 21: Laboratory chemicals	F, I, **P**			I			

PC 19: Intermediate	F, I, **P***				F, I, **P**, **C**		

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, *=ECHA assessment.

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

Data extracted on 14/11/2022.

EC / List number	RMOA	Authorisation		Restriction*	CLH	Actions not under REACH / CLP
		Candidate list	Annex XIV	Annex XVII	Annex VI (CLP)	
401-640-7				YES	YES	
700-567-0					YES	

*Some of the broad restriction entries in the Annex XVII of REACH are not represented in the overview, e.g. when the scope of the restriction is defined by its classification or the substance identification is broad (e.g. entries 3, 28-30 and 40).

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

[i] The inorganic speciation of tin(II) in aqueous solution - ScienceDirect