

## Assessment of regulatory needs

**Authority: European Chemicals Agency (ECHA)**

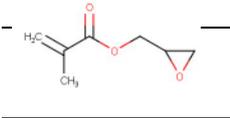
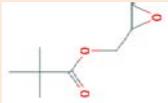
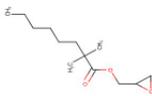
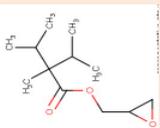
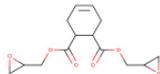
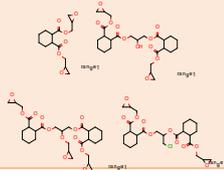
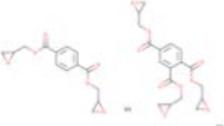
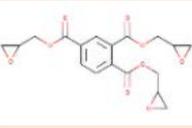
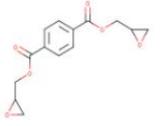
**Group Name: Glycidyl ethers and esters**

**General structure: -**

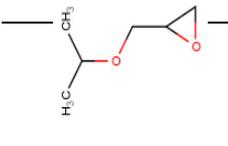
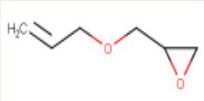
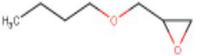
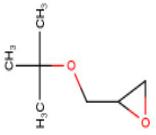
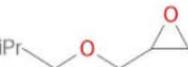
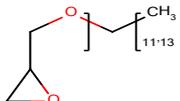
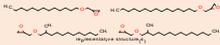
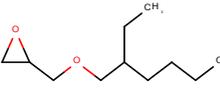
### Revision history

<i>Version</i>	<i>Date</i>	<i>Description</i>
1.0	2 December 2021	

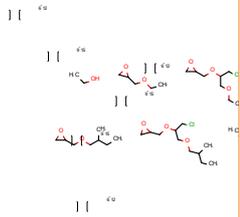
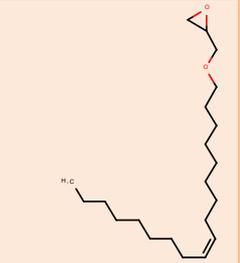
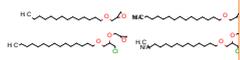
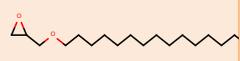
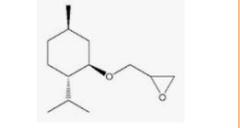
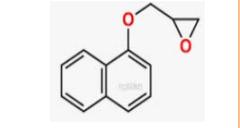
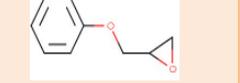
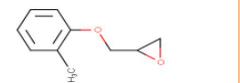
ASSESSMENT OF REGULATORY NEEDS

EC/List number	CAS number	Substance name	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y)
<b>Glycidyl esters</b>				
203-441-9	106-91-2	2,3-epoxypropyl methacrylate		Full, >1000
413-660-3		oxiran-2-ylmethyl 2,2-dimethylpropanoate		OSII or TII, not (publicly) available
247-979-2	26761-45-5	2,3-epoxypropyl neodecanoate		Full, 10-100
940-029-4		Nonanoic acid (branched), 2-oxiranylmethyl ester		Full, not (publicly) available
244-435-6	21544-03-6	bis(2,3-epoxypropyl) cyclohex-4-ene-1,2-dicarboxylate		Full, 10-100
696-026-0	1395383-69-3	1,3-Isobenzofurandione, hexahydro-, reaction products with epichlorohydrin		Full, 100-1000
940-592-6		reaction mass of bis(2,3-epoxypropyl) terephthalate and tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate		Full, not (publicly) available
230-565-0	7195-44-0	bis(2,3-epoxypropyl) terephthalate		Full, inactive, not (publicly) available
230-638-7	7237-83-4	tris(oxiranylmethyl) benzene-1,2,4-tricarboxylate		Full, inactive, not (publicly) available

ASSESSMENT OF REGULATORY NEEDS

EC/List number	CAS number	Substance name	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y)
<b>Glycidyl ethers – Short-chain aliphatic monoglycidyl</b>				
223-672-9	4016-14-2	2,3-epoxypropyl isopropyl ether		Full, not (publicly) available
203-442-4	106-92-3	allyl 2,3-epoxypropyl ether		Full, OSII or TII <1000
219-376-4	2426-08-6	butyl 2,3-epoxypropyl ether		Full, OSII or TII <1000
231-640-0	7665-72-7	(tert-butoxymethyl)oxirane		Full, not (publicly) available
223-303-1	3814-55-9	(isobutoxymethyl)oxirane		OSII or TII, not (publicly) available
<b>Glycidyl ethers – Long-chain aliphatic monoglycidyl</b>				
271-846-8	68609-97-2	Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.		Full, 10-100
701-328-3 (previously EC 939-183-5)		Alcohols C13-15 (branched and linear, odd numbered), reaction product with 1-chloro-2,3-epoxypropane		Full, OSII or TII, 100-1000
219-553-6	2461-15-6	[[2-ethylhexyl)oxy]methyl]oxirane		Full, 100-1000
271-845-2	68609-96-1	Oxirane, mono[(C8-10-alkyloxy)methyl] derivs.		OSII or TII, not (publicly) available

ASSESSMENT OF REGULATORY NEEDS

EC/List number	CAS number	Substance name	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y)
268-358-2	68081-84-5	Oxirane, mono[(C10-16-alkyloxy)methyl] derivs.		OSII or TII, not (publicly) available
262-268-7	60501-41-9	(Z)-[(octadec-9-enyloxy)methyl]oxirane		OSII or TII, not (publicly) available
700-630-2		2-[(C14-C15-alkyloxy)methyl]oxirane		OSII or TII, not (publicly) available
240-104-5	15965-99-8	[(hexadecyloxy)methyl]oxirane		OSII or TII, not (publicly) available
814-125-0	249297-16-3	2-({ [(1R,2S,5R)-2-Isopropyl-5-methylcyclohexyl]oxy }methyl)oxirane		OSII or TII, not (publicly) available
<b>Glycidyl ethers – Aromatic monoglycidyl</b>				
219-555-7	2461-42-9	[(naphthyloxy)methyl]oxirane		OSII or TII, <1000
204-557-2	122-60-1	2,3-epoxypropyl phenyl ether		OSII or TII, not (publicly) available
218-645-3	2210-79-9	2,3-epoxypropyl o-tolyl ether		Full, 100-1000

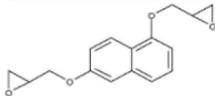
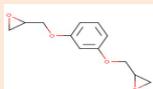
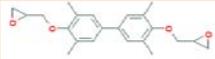
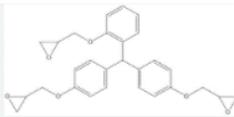
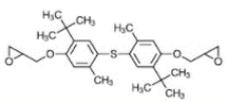
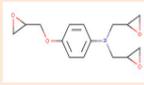
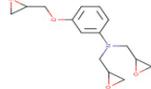
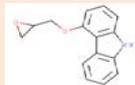
## ASSESSMENT OF REGULATORY NEEDS

EC/List number	CAS number	Substance name	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y)
221-453-2	3101-60-8	p-tert-butylphenyl 1-(2,3-epoxy)propyl ether		Full, 100-1000
500-210-7	68413-24-1	Cashew, nutshell liq., oligomeric reaction products with 1-chloro-2,3-epoxypropane		Full, 100-1000
218-644-8	2210-74-4	[(o-methoxyphenoxy)methyl]oxirane		OSII or TII, not (publicly) available
245-052-7	22525-95-7	2'-(oxiranylmethoxy)-3-phenylpropiofenone		OSII or TII, not (publicly) available
260-353-3	56718-70-8	[[p-(2-methoxyethyl)phenoxy]methyl]oxirane		OSII or TII, not (publicly) available
613-981-0	66722-57-4	1-[4-[[2-(isopropoxy)ethoxy]methyl]phenoxy]-2,3-epoxypropane		OSII or TII, not (publicly) available
935-721-8		Phenol, styrenated, epoxidized		Full, inactive, not (publicly) available
937-989-1		2-({2-[4-(2,4,5-trimethylhexan-3-yl)phenoxy]ethoxy}methyl)oxirane		OSII or TII, inactive, not (publicly) available
<b>Glycidyl ethers - Aliphatic polyglycidyl ethers</b>				
218-746-2	2224-15-9	2,2'-[ethylenebis(oxymethylene)]bisoxirane	C2 	Full, not (publicly) available
219-371-7	2425-79-8	1,4-bis(2,3-epoxypropoxy)butane	C4 	Full, >1000

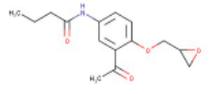
ASSESSMENT OF REGULATORY NEEDS

EC/List number	CAS number	Substance name	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y)
618-939-5	933999-84-9	Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane (1:2)	C6 	Full, >1000
701-333-0		Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane		Full, not (publicly) available
701-135-4 (previously EC 608-489-8)		Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis((2,3-epoxypropoxy)methyl)butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethylbutane		Full, 100-1000
701-197-2	90529-77-4	Reaction products of 2-(chloromethyl)oxirane and glycerol		Full, 100-1000
947-448-1		Reaction products of ethylene glycol, epichlorohydrin and sodium hydroxide		OSII or TII, inactive, not (publicly) available
238-098-4 (previously EC 600-447-7)	14228-73-0	1,4-bis[(2,3-epoxypropoxy)methyl]cyclohexane		Full, 10-100
236-502-3	13410-58-7	2,2'-[(1-methylethylidene)bis(cyclohexane-4,1-diyloxymethylene)]bis oxirane		Full, not (publicly) available
500-070-7	30583-72-3	4,4'-Isopropylidenedicyclohexanol, oligomeric reaction products with 1-chloro-2,3-epoxypropane		Full, 100-1000
701-333-0 (previously 241-536-7)	17557-23-2	1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane		C&L notification

ASSESSMENT OF REGULATORY NEEDS

EC/List number	CAS number	Substance name	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y)
<b>Glycidyl ethers – Aromatic polyglycidyl ethers</b>				
429-960-2	27610-48-6	6-glycidyloxynapht-1-yl oxymethyloxirane		Full, NONS, not (publicly) available
202-987-5		m-bis(2,3-epoxypropoxy)benzene		Full, not (publicly) available
440-920-3		2-[[4-[2-(cyclopropylmethoxy)ethyl]phenoxy]methyl]oxirane		OSII or TII, not (publicly) available
413-900-7	85954-11-6	2,2'-((3,3',5,5'-tetramethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(oxymethylene))-bis-oxirane		Full, NONS, not (publicly) available
942-639-6		Reaction products of 2-(chloromethyl)oxirane with phenol and salicylaldehyde oligomers		Full, not (publicly) available
441-520-1		4,4'-(2,3-epoxypropoxy)-2,2'-dimethyl-5,5'-tert-butylidiphenylsulphide		Full, NONS, not (publicly) available
<b>Glycidyl ethers – Aromatic glycidyl ether, amine/amide functionality</b>				
225-716-2	5026-74-4	p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	Amine 	Full, 100-1000
275-662-9	71604-74-5	m-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	Amine 	Full, 100-1000
610-764-2	51997-51-4	4-(Oxiran-2-ylmethoxy)-9H-carbazole	Amine 	OSII or TII, not (publicly) available

ASSESSMENT OF REGULATORY NEEDS

EC/List number	CAS number	Substance name	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y)
248-893-8	28197-66-2	N-[3-acetyl-4-(oxiranylmethoxy)phenyl]butyramide	Amide 	OSII or TII, 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

<b>Foreword</b> .....	<b>11</b>
<b>Glossary</b> .....	<b>12</b>
<b>1 Overview of the group</b> .....	<b>13</b>
<b>2 Justification for the need for regulatory risk management action at EU level</b> .....	<b>14</b>
<b>3 Conclusions and actions</b> .....	<b>19</b>
<b>Annex 1: Overview of classifications</b> .....	<b>24</b>
<b>Annex 2: Overview of uses based on information available in registration dossiers</b> .....	<b>29</b>
<b>Annex 3: Overview of completed or ongoing regulatory risk management activities</b> .....	<b>32</b>

## **DISCLAIMER**

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<sup>1</sup>.

---

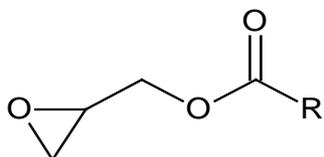
<sup>1</sup> <https://echa.europa.eu/understanding-assessment-regulatory-needs>

## Glossary

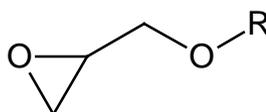
ARN	Assessment of regulatory needs
CCH	Compliance check
CLH	Harmonised classification and labelling
CMR	Carcinogenic, mutagenic and/or toxic to reproduction
DEv	Dossier evaluation
ED	Endocrine disruptor
NONS	Notified new substances
OEL	Occupational exposure limit
OSH	Occupational safety and health
OSII 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 glycidyl moiety shown in the figures below. The group consists of glycidyl esters and glycidyl ethers with both aliphatic and aromatic backbones. Substances based on bisphenol or silane backbone as well as brominated substance are excluded from the group.



**Glycidyl esters (9)**



**Glycidyl ethers (50)**

R = aliphatic or aromatic

The group can be divided into 7 groups based on their chemical structure:

1. Glycidyl esters
2. Glycidyl ethers - Short-chain aliphatic monoglycidyl ethers (alkyl chain C3-C4)
3. Glycidyl ethers - Long-chain aliphatic monoglycidyl ethers (alkyl chain >C5)
4. Glycidyl ethers - Aromatic monoglycidyl ethers
5. Glycidyl ethers - Aliphatic polyglycidyl ethers
6. Glycidyl ethers - Aromatic polyglycidyl ethers
7. Glycidyl ethers - Aromatic glycidyl ethers with amine/amide functionalities

The group consists of 59 substances, with 47 having active registrations (17 >100 tonnes/year), of which 19 are registered as intermediates only. There are also eight inactive registrations (e.g. EC number changes, invalid registrations).

Based on information reported in the REACH registration dossiers, the substances are used as intermediate, monomer, viscosity modifier, binding agent and stabiliser. This corresponds with the main uses being as intermediates or in polymer preparations for use as adhesives, coatings, fillers, washing and cleaning products. The substances have mainly industrial uses, with some professional uses and a limited number of consumer uses of the polymer preparations. Although in most Article 10 registration dossiers the substances are claimed to be used as intermediate/monomer/pre-polymer/resin etc. it is quite often in combination with for instance use as viscosity modifier and the use actually looks like what is normally considered to be article treatment. Therefore, there is potential for exposure for workers and consumers and release from articles.

Many of the substances are currently under data generation, some are under or proposed for substance evaluation (mutagenicity and/or skin sensitisation and/ or other hazard-based concern) and with harmonised classification (CLH) intentions.

**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 need for regulatory risk management action at EU level

The group is based on the presence of glycidyl moiety with potential CMR hazard, and in particular reproductive toxicity. Seven of the substances also have some indication of potential PBT/vPvB properties. However, more data is needed to clarify the hazard in most cases.

Potential reproductive toxicity and carcinogenicity hazards were identified for all glycidyl esters including EC 247-979-2, based on read-across to glycidyl esters with available data, supported by the formation of the common hydrolysis product glycidol. No environment hazards were identified for glycidyl esters, except for aquatic toxicity for EC 203-441-9 and List no. 940-592-6, which is to be clarified by compliance check (CCH).

For short-chain aliphatic monoglycidyl ethers available data for EC 223-672-9 and EC 203-442-4 indicate potential reprotoxic hazard, and the registrant has applied read-across to EC 219-376-4 and EC 231-640-0, so the hazard could also apply to them. Short-chain aliphatic monoglycidyl ethers are toxic to the aquatic environment (no data available for EC 223-303-1 due to intermediate registration).

The long-chain aliphatic monoglycidyl ethers EC 271-846-8, List no. 701-328-3 and EC 219-553-6 are potentially toxic to reproduction and/or PBT/vPvB. The data are not sufficient to finally conclude on the human health or environmental hazards and need to be clarified first by CCH (ENV, all three substances) and ongoing data generation for reproductive toxicity and substance evaluation (SEv) for mutagenicity for EC 271-846-8.

Likewise, the aromatic monoglycidyl ethers EC 218-645-3, EC 221-453-2 and EC 500-210-7 are potentially reproductive toxic and/or PBT. The current data is

however not sufficient to conclude on the human health and environmental hazards and needs to be confirmed by CCH/SEv.

Reproductive toxicity hazard was also identified for most of the aliphatic polyglycidyl ethers. Hazard will be confirmed by CCH proposed for EC 500-070-7, List no. 701-197-2 and EC 238-098-4, as well as CCH ongoing for EC 219-371-7, List nos. 618-939-5 and 701-333-0. There is also an ongoing CLH for Repr. 1B for List no. 701-135-4 and potential for Repr. 1B for EC 218-746-2. In addition, there is a potential PBT hazard for List no. 701-197-2 and EC 500-070-7 to be clarified by CCH.

The aromatic polyglycidyl ether EC 202-987-5 has a proposal for harmonised classification as Carc. 1B (current harmonised classification is Carc. 2).

**Based on currently available information, there is a need for (further) EU regulatory risk management – restriction** for potential carcinogenicity and/or mutagenicity, and/or reproductive toxicity and/or PBT hazards due to the potential for release/ exposure of the substances EC 247-979-2 , EC 223-672-9, EC 219-376-4, EC 231-640-0, EC 271-846-8, List no. 701-328-3, EC 219-553-6, EC 218-645-3, EC 221-453-2, EC 500-210-7, EC 219-371-7, List no. 618-939-5, List no. 701-333-0, List no. 701-135-4, List no. 701-197-2, EC 238-098-4, EC 500-070-7 and EC 202-987-5.

The substances listed above have professional or consumer uses in polymer preparations, adhesives, coatings, fillers and/or inks. Some of the substances have also been reported to be used by professionals in non-metal treatment products (EC 500-070-7), lubricants (EC 219-553-6) as well as in washing and cleaning products (EC 223-672-9, EC 231-640-0).

For the substances with **potential PBT properties and potential CMR properties** (EC 271-846-8, List no. 701-328-3, EC 500-210-7, List no. 701-197-2, and EC 500-070-7) restriction is considered the most appropriate regulatory risk management option.

The first step of the regulatory risk management action proposed, should the hazards exist, is the confirmation of hazard via SVHC identification as PBT and via harmonised classification (CLH) as carcinogenic/& mutagenic /& reprotoxic.

SVHC identification and CLH are highly recommended as a step prior to restriction. In addition, SVHC identification brings immediate obligations for suppliers of the substances such as (i) supplying a safety data sheet and communicating on the safe use of the substances, (ii) responding to consumer requests within 45 days and (iii) notifying ECHA if the article they produce contains the substance above regulatory threshold.

CLH i) will require company level risk management measures (RMM) under the Occupational safety and health (OSH) legislation for workers, to be in place, and ii) is a prerequisite to restrict the presence of the substances in consumer mixtures, by means of the restriction entries 28, 29 and 30. The CLH would have to consider other substances in the groups for which a potential for toxicity (C/M/R) has been identified.

Confirmation of the hazard properties via SVHC identification is not considered sufficient to minimise potential releases of the substances in the environment. Potential for release and exposure is expected in particular from consumer uses (e.g. adhesives, sealants, fillers, putties, plasters and coatings) where releases to the environment cannot be avoided.

The professional uses in polymer preparations for adhesives, fillers or coatings, in

washing and cleaning products, ink and toners, lubricants and non-metal surface treatment products are expected to be widespread (at many sites and by many users) and typically non-contained and non-automated leading to releases to the environment and with relatively low levels of operational controls and risk management measures but with often frequent exposures with a long duration leading to potential workers' exposure. In addition, professional users may be self-employed and therefore not covered by OSH legislation.

Consumers may be co-exposed to the substances used by professionals (polymer preparations for adhesives or coatings, stabiliser in washing and cleaning products).

Therefore, a restriction of the substances as such or in mixtures (concentration limit in mixtures) used by consumers and industrial and professional workers is suggested after SVHC identification and CLH, with the aim to minimise exposures and emissions to humans and the environment.

In addition, the use of the most harmful substances (e.g. PBT/vPvB, CMR) by consumers and professional workers has been recognised as an area of concern under the European Commission's Chemicals Strategy for Sustainability<sup>2</sup>.

Moreover, **restricting substances in articles** used by professionals or consumers should be considered in the context of the restriction as potential exposure from articles (e.g. where the substances are used as adhesives, coatings, fillers, inks and surface treatment) needs further investigation first.

List no. 701-197-2 is only used in industrial settings as intermediate in polymers, non-metal treatment products and adhesives, however, it is also proposed to be included in the restriction if the PBT hazard is confirmed to minimise release to the environment.

For the remaining substances with **potential CMR properties only** restriction of the substances as such or in mixtures (concentration limit in mixtures) used by professionals is suggested.

As for the other substances the first step of the regulatory risk management action proposed, should the hazards exist, is the confirmation of hazard via CLH as carcinogenic/& mutagenic /& reprotoxic. As before, the CLH would have to consider other substances in the groups for which a potential for toxicity (C/M/R) has been identified.

The remaining substances also have professional uses (e.g. adhesives, fillers or coatings, in washing and cleaning products), where potential for exposure and low levels of operational controls and risk management measures are expected. 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. As before, it is suggested to consider restricting substances in articles used by professionals in the context of the restriction as potential exposure from articles needs further investigation first.

**Based on currently available information, there is a need for (further) EU regulatory risk management – CLH** for potential carcinogenicity and/or mutagenicity, and/or reproductive toxicity hazards due to the potential for exposure of the substances EC 203-441-9, EC 413-660-3, EC 244-435-6, List no. 696-026-0, List no. 940-592-6, List no. 940-029-4, EC 230-565-0, EC 230-638-7, EC 203-442-4, EC 223-303-1, EC 271-845-2, EC 268-358-2, EC 262-268-7, List

---

<sup>2</sup> European Commission, *Chemical Strategy for Sustainability Towards a Toxic-Free Environment*, available at <https://ec.europa.eu/environment/pdf/chemicals/2020/10/Strategy.pdf>

no. 700-630-2, EC 240-104-5, List no. 814-125-0, EC 218-746-2, List no. 947-448-1, EC 225-716-2, EC 275-662-9).

**For the other substances with potential C/M/R hazard** and only industrial uses or substitution potential CLH is suggested as the most appropriate regulatory risk management option.

When preparing the CLH proposals, it may be considered what would be the best way to develop them, for instance whether to make a proposal for the group of substances, to submit them individually or jointly.

The glycidyl esters EC 230-565-0 and EC 230-638-7 have no active registrations, and for List no. 940-029-4 there are no uses indicated in its registration, while the previous/active registrations of these substances describe article treatment uses. The CLH should include them, as regulatory pressure on the other substances in this group could reactivate the uses of these substances. EC 203-441-9 already has a harmonised classification as Carc. 1B. Mutagenicity (Muta. 2) is to be clarified by CCH.

Based on the structural similarity, read-across for reproductive toxicity can also be applied to the short-chain aliphatic monoglycidyl ether EC 223-303-1. Although there is a single intermediate registration, meaning the substance is used under strictly controlled conditions, this substance could be used to substitute the non-intermediate industrial uses of the other substances. Therefore, it should be included in the CLH.

Six long-chain aliphatic monoglycidyl ethers have only intermediate registrations. If reproductive toxicity hazard is confirmed for the substances with full registrations, the same hazard is potential at least for three of the intermediate registrations (EC 271-845-2, EC 268-358-2, List no. 700-630-2) and also possible for the others, although more data cannot be requested. The registration information indicates that all (List no. 814-125-0 is more uncertain) could be possible substitutes for the other substances in this group for the industrial use in polymer preparations in adhesives, fillers and coatings. Based on the structure, it is not possible to conclude on the hazard or the use for List no. 814-125-0, but similar hazard and potential for substitution cannot be ruled out. Therefore, the long-chain aliphatic monoglycidyl ethers with intermediate registrations should be included in the proposed CLH.

For aromatic glycidyl ethers with amine/amide functionalities CLH is also proposed for the industrial uses in adhesives and coatings (most likely in polymer preparations) if reproductive toxicity and/or genotoxicity hazard is confirmed. The substances EC 225-716-2 and EC 275-662-9 are potentially toxic to reproduction, with the data indication potential for Repr. 1B or Repr. 2 for these substances relying on read-across to EC 225-716-2. Both substances are also potential mutagens with CCH proposed to confirm the potential to classify Muta. 1B (germ cells). Both substances are also potentially aquatic toxic and CCH has been proposed for both to clarify the hazard. Although EC 225-716-2 is claimed to be used as intermediate/binder in registrations, a deeper look reveals activities such as dipping and pouring, industrial spraying and roller applications, all of which lead to significant worker exposure, and are not typical of intermediate uses but article treatment. Similarly, EC 275-662-9 is claimed to be used as monomer in registrations, but again the uses include an activity which leads to significant exposure for industrial workers and looks like article treatment (in this case low energy manipulation and handling of substances bound in/on materials or articles). In addition, the two substances are so structurally similar, that there is a clear potential for substitution.

**Based on currently available information, it is not possible to assess the need for regulatory risk management** as information on hazard is not sufficient to conclude on potential carcinogenicity, mutagenicity, reproductive toxicity or PBT/vPvB, aquatic toxicity hazards for the remaining substances.

Eight aromatic monoglycidyl ethers (EC 219-555-7, EC 204-557-2, EC 218-644-8, EC 245-052-7, EC 260-353-3, List no. 613-981-0, List no. 935-721-8, List no. 937-989-1) have only intermediate registrations. The hazard cannot be confirmed for at least six of the substances, with no possibility to request more data, and the information on possible substitution is limited. There is a greater structural diversity within the substances and therefore the extension of the potential hazard and substitution potential to all substances is more uncertain. For the moment we propose no action for the intermediate registered substances, but they would need to be re-examined at a later stage.

One of the aliphatic polyglycidyl ethers has a different use from the rest, EC 236-502-3 is used as UV stabiliser in industrial and professional uses, in polymer preparations, adhesives, fillers and coatings. It screens for PBT but the registration tonnage is too low to request data. This substance should be re-examined for changes to registration tonnage and uses. EC 241-536-7 has only a C&L notification, so it should also be re-examined later for changes (i.e. possible registration).

Due to greater structural variability, the read-across to the aromatic glycidyl ethers with amine/amide functionalities with intermediate registrations (EC 248-893-8 and List no. 610-764-2) is uncertain. Although, the CMR hazard concern arises due to the glycidyl moiety present in both substances, it cannot be concluded with certainty that the two intermediate registered substances can be used as substitutes, although for List no. 610-764-2 there is an example of use in polymer preparations. Due to the uncertainty, it is decided to wait and re-examine them should the registrations be updated.

The remaining substances are either notified new substances (NONS) or low tonnage registrations so data cannot be requested. Therefore, no further EU RRM is suggested, although there are the same uses (industrial and professional uses in polymer preparations for adhesives and coatings) and hazards as for the ones for which restriction is proposed above. The potential human health hazards are skin sensitisation, mutagenicity (Muta. 2) and carcinogenicity (Carc. 2) for EC 429-960-2, EC 440-920-3 and EC 413-900-7. For industrial and professional uses, sufficient and consistent self-classification by registrants as skin sensitiser should require adequate risk management measures to be in place according to workplace legislation for EC 429-960-2, EC 440-920-3 and EC 413-900-7.

For List no. 942-639-6 and EC 441-520-1 there are no human health hazards identified with the available data. For the environment List no. 942-639-6 (stabiliser) and EC 441-520-1 (photovoltaic agent) screen for PBT/vPvB.

As a conclusion, if the registration status or uses changes for the substances mentioned above, data generation and potentially follow up actions will be re-considered when the assessment will be revisited.

### 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 number	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Last foreseen action	Action
247-979-2	Known or potential hazard for carcinogenicity, mutagenicity, reproductive toxicity and skin sensitisation	Known or potential hazard for PBT/vPvB for EC 271-846-8, List. no. 701-328-3 and EC 500-210-7, List no. 701-197-2, EC 500-070-7 for aquatic toxicity for EC 223-672-9, EC 219-376-4, EC 231-640-0, EC 219-553-6, EC 218-645-3 and EC 221-453-2, List no. 618-939-5, List no. 701-135-4	Industrial, professional and/or consumer uses in polymer preparations for adhesives or coatings/fillers (for List no. 701-197-2 only industrial use). Potential for exposure for workers and consumers.	<b>Need for EU RRM: Restriction</b>  <u>Justification:</u> Harmonised classification followed by implementation of necessary RRMs should be sufficient to ensure safe use by workers at industrial settings	<b>First step:</b> CCH for EC 271-846-8, List no. 701-328-3, EC 219-553-6, EC 218-645-3, EC 221-453-2, EC 500-210-7, List no. 701-197-2, EC 238-098-4, EC 500-070-7, SEv for EC 218-645-3 and EC 221-453-2  Ongoing EOGRTS for EC 247-979-2
223-672-9 219-376-4 231-640-0					
202-987-5					
271-846-8 701-328-3 219-553-6 218-645-3 219-371-7 618-939-5 701-333-0	Known or potential hazard for mutagenicity, reproductive toxicity and skin sensitisation		Industrial and professional uses as stabiliser in washing and cleaning products (EC 223-672-9 and 231-640-0). Potential for exposure for workers.	The harmonised classification as C/M/R 1 would lead to generic restrictions of the substance(s) in consumer mixtures by means of restriction entry 28/ 29/ 30 and by that ensure that the substances are not included in consumer mixtures above the limits	<b>Next steps (if hazard confirmed):</b> CLH, SVHC identification for EC 271-846-8, List no. 701-328-3, EC 500-210-7, List no. 701-197-2, EC 500-070-7 Restriction

ASSESSMENT OF REGULATORY NEEDS

EC/List number	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Last foreseen action	Action
<p><b>701-135-4</b> <b>701-197-2</b></p>	<p>Known or potential hazard for mutagenicity, reproductive toxicity</p>			<p>specified in that entry.</p>	
<p><b>500-070-7</b> <b>238-098-4</b></p>	<p>Known or potential hazard for mutagenicity and skin sensitisation</p>			<p>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.</p>	
<p><b>221-453-2</b> <b>500-210-7</b></p>	<p>Known or potential hazard for reproductive toxicity and skin sensitisation</p>			<p>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.</p> <p>Potential exposure from articles needs further investigation, restriction for use in articles to be considered together with the restriction of professional uses.</p>	

ASSESSMENT OF REGULATORY NEEDS

EC/List number	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Last foreseen action	Action
<p>203-441-9 413-660-3 244-435-6 696-026-0 940-592-6 940-029-4 230-565-0 230-638-7 203-442-4 223-303-1</p>	<p>Known or potential hazard for carcinogenicity, mutagenicity, reproductive toxicity and skin sensitisation</p>	<p>Known or potential hazard for aquatic toxicity for EC 413-660-3, 230-565-0 and EC 203-442-4</p> <p>No data for EC 223-303-1</p>	<p>Industrial use as intermediate/pre-polymer/ in polymer preparations for adhesives or coatings Potential for exposure for workers.</p> <p>No active registrations for EC 230-565-0 and EC 230-638-7.</p>	<p><b>Need for EU RRM: CLH</b></p> <p><u>Justification:</u> Harmonised classification followed by implementation of necessary RRMs should be sufficient to ensure safe use by workers at industrial settings.</p>	<p><b>First step:</b> CCH for EC 203-441-9, EC 244-435-6, List no. 696-026-0, List no. 940-592-6, EC 225-716-2, EC 275-662-9</p> <p><b>Next steps (if hazard confirmed):</b> CLH</p>
<p>271-845-2 268-358-2 262-268-7 700-630-2 240-104-5 814-125-0</p> <p>218-746-2 947-448-1</p>	<p>Known or potential hazard for mutagenicity, reproductive toxicity and skin sensitisation</p>	<p>No hazard or unlikely hazard</p>			
<p>225-716-2 275-662-9</p>		<p>Known or potential hazard for aquatic toxicity</p>	<p>Industrial uses for adhesives and coatings (most likely in polymer preparations) for activities such as dipping and pouring, industrial spraying, rolling etc. Potential for exposure for workers.</p>		

ASSESSMENT OF REGULATORY NEEDS

EC/List number	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Last foreseen action	Action
<p>219-555-7 204-557-2 218-644-8 245-052-7 260-353-3 613-981-0 935-721-8 937-989-1</p> <p>610-764-2 248-893-8</p>	Inconclusive hazard	Inconclusive hazard	Limited data on uses and substitution due to intermediate registrations.	<p><b>Currently no need for EU RRM</b></p> <p><u>Justification:</u> According to the reported uses, low potential for exposure to both human health and environment is expected. Actions (including data generation) will be re-considered when the assessment will be revisited if the registration status and/or uses change.</p>	No action
<p>236-502-3 241-536-7</p>	No hazard or unlikely hazard	Known or potential hazard for PBT/vPvB for EC 236-502-3	<p>Low tonnage/ C&amp;L notification.</p> <p>Industrial and professional use in polymer preparations, adhesives, fillers and coatings (EC 236-502-3). Potential for exposure for workers.</p>	<p><b>Currently no need for EU RRM</b></p> <p><u>Justification:</u> Actions (including data generation) will be re-considered when the assessment will be revisited if the registration status changes.</p>	No action

ASSESSMENT OF REGULATORY NEEDS

EC/List number	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Last foreseen action	Action
429-960-2 440-920-3 413-900-7	Known or potential hazard for carcinogenicity, mutagenicity and skin sensitisation	No hazard or unlikely hazard	Low tonnage/ NONS registration.  Industrial and professional uses in polymer preparations for adhesives and coatings. Potential for exposure for workers.	<b>Currently no need for EU RRM</b>  <u>Justification:</u> Actions (including data generation) will be re-considered when the assessment will be revisited if the registration status changes.  Self-classification as skin sensitiser followed by implementation of necessary RRMs should be sufficient to ensure safe use at the workplace.	No action
942-639-6	No hazard or unlikely hazard	Inconclusive hazard for PBT/vPvB			
441-520-1					

## Annex 1: Overview of classifications

Data extracted on 24 March 2021.

EC/ List No	Harmonised classification	Classification in registrations
<b>203-441-9</b>	Acute Tox. 4 H302 Acute Tox. 3 H311 Skin Corr. 1C H314 Eye Dam. 1 H318 Skin Sens. 1 H317 STOT SE 3 H335 Muta. 2 H341 Carc. 1B H350 STOT RE 1 H372 (respiratory tract) (Inhalation) Repr. 1B H360F	"STOT Rep. Exp. 1 H372, affected organs: respiratory tract Muta. 2 H341 Skin Sens. 1A H317 STOT Single Exp. 3 H335, affected organs: respiratory tract Carc. 1B H350 Acute Tox. 3 H311 Repr. 1B H360, specific effect: Effect on fertility (H360F) Skin Corr. 1C H314 Eye Damage 1 H318 Acute Tox. 4 H302
<b>413-660-3</b>		Eye Irrit. 2 H319 Skin Sens. 1 H317 Carc. 1B H350 Muta. 2 H341 Skin Irrit. 2 H315
<b>247-979-2</b>	Proposal Skin Sens. 1A, H317 Muta. 2, H341	Muta. 2 H341 Skin Sens. 1 H317
<b>940-029-4</b>		Muta. 2 H341 Skin Sens. 1B H317 Aquatic Chronic 2 H411
<b>244-435-6</b>		Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1 H317
<b>696-026-0</b>		Skin Sens. 1 H317 Aquatic Chronic 3 H412
<b>940-592-6</b>		Repr. 2 H361 Acute Tox. 4 H302 Skin Irrit. 2 H315 Eye Damage 1 H318 Skin Sens. 1 H317 STOT Rep. Exp. 2 H373, affected organs: Central nervous system, epididymides Aquatic Chronic 2 H411
<b>230-565-0</b>		-
<b>230-638-7</b>		Aquatic Chronic 2 H411 Eye Irrit. 2 H319 Skin Sens. 1 H317
<b>223-672-9</b>		Repr. 2 H361, specific effect: fertility Flam. Liquid 3 H226 Acute Tox. 4 H302 Acute Tox. 3 H331 Skin Irrit. 2 H315

ASSESSMENT OF REGULATORY NEEDS

EC/ List No	Harmonised classification	Classification in registrations
		Eye Irrit. 2 H319 Aquatic Chronic 3 H412
<b>203-442-4</b>	Acute Tox. 4 * H302 Skin Irrit. 2 H315 Eye Dam. 1 H318 Skin Sens. 1 H317 Acute Tox. 4 * H332 STOT SE 3 H335 Muta. 2 H341 Carc. 2 H351 Aquatic Chronic 3 H412 Repr. 2 H361f ***	STOT Single Exp. 3 H335  Carc. 2 H351 Muta. 2 H341 Repr. 2 H361 Flam. Liquid 3 H226 Acute Tox. 4 H302 Acute Tox. 5 H313 Acute Tox. 3 H331 Skin Irrit. 2 H315 Eye Damage 1 H318 Skin Sens. 1 H317 STOT Single Exp. 3 H335, affected organs: . Aquatic Chronic 3 H412
<b>219-376-4</b>	Flam. Liq. 3 H226 Acute Tox. 4 * H302 Skin Sens. 1 H317 Acute Tox. 4 * H332 STOT SE 3 H335 Muta. 2 H341 Carc. 2 H351 Aquatic Chronic 3 H412	Carc. 2 H351 Muta. 2 H341 Repr. 2 H361 Flam. Liquid 3 H226 Acute Tox. 4 H302 Acute Tox. 4 H332 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1 H317 STOT Single Exp. 3 H335 Aquatic Chronic 2 H411 Aquatic Chronic 3 H412
<b>231-640-0</b>		Carc. 2 H351 Muta. 2 H341 Flam. Liquid 3 H226 Acute Tox. 4 H302 Skin Irrit. 2 H315 Eye Damage 1 H318 Skin Sens. 1B H317 STOT Single Exp. 3 H335 Aquatic Chronic 3 H412
<b>223-303-1</b>		-
<b>219-555-7</b>		Carc. 2 H351  Skin Sens. 1 H317  Muta. 2 H341
<b>204-557-2</b>	Skin Irrit. 2 H315 Skin Sens. 1 H317 Acute Tox. 4 * H332 STOT SE 3 H335 Muta. 2 H341 Carc. 1B H350 Aquatic Chronic 3 H412	Muta. 2 H341 STOT Single Exp. 3 H335, affected organs: Respiratory system  Acute Tox. 4 H332  STOT Single Exp. 3 H335, affected organs: Respiratory system STOT Single Exp. 3 H335

ASSESSMENT OF REGULATORY NEEDS

EC/ List No	Harmonised classification	Classification in registrations
		Skin Sens. 1 H317 Skin Irrit. 2 H315[registration, intermediate, active] Aquatic Chronic 3 H412 Carc. 1B H350 Acute Tox. 4 H302
<b>218-645-3</b>	Skin Irrit. 2 H315 Skin Sens. 1 H317 Muta. 2 H341 Aquatic Chronic 2 H411	Muta. 2 H341 Skin Irrit. 2 H315 Skin Sens. 1A H317
<b>221-453-2</b>		Skin Sens. 1 H317
<b>500-210-7</b>		Skin Sens. 1B H317 STOT Rep. Exp. 2 H373
<b>218-644-8</b>		Skin Sens. 1 H317 Skin Irrit. 2 H315
<b>245-052-7</b>		-
<b>260-353-3</b>		Skin Irrit. 2 H315 Eye Irrit. 2 H319
<b>613-981-0</b>		-
<b>935-721-8</b>		Skin Sens. 1 H317 Aquatic Chronic 2 H411 Eye Irrit. 2 H319 Skin Irrit. 2 H315
<b>937-989-1</b>		Skin Irrit. 2 H315 Skin Sens. 1 H317
<b>271-846-8</b>		Skin Irrit. 2 H315 Skin Sens. 1 H317
<b>701-328-3</b>		Skin Sens. 1 H317 Aquatic Chronic 2 H411
<b>219-553-6</b>		Skin Irrit. 2 H315 Skin Sens. 1A H317
<b>271-845-2</b>		Skin Irrit. 2 H315 Skin Sens. 1B H317 Aquatic Chronic 2 H411 Eye Irrit. 2 H319
<b>268-358-2</b>		Skin Sens. 1 H317 Aquatic Chronic 2 H411
<b>262-268-7</b>		-
<b>700-630-2</b>		Skin Irrit. 2 H315 Skin Sens. 1 H317

ASSESSMENT OF REGULATORY NEEDS

EC/ List No	Harmonised classification	Classification in registrations
240-104-5		Skin Sens. 1 H317 Skin Irrit. 2 H315]
814-125-0		-
218-746-2		Muta. 2 H341 Repr. 1B H360 Acute Tox. 4 H302 Eye Damage 1 H318 Skin Sens. 1B H317 Aquatic Chronic 3 H412
219-371-7		Acute Tox. 4 H302 Acute Tox. 4 H312 Acute Tox. 4 H332 Skin Irrit. 2 H315 Eye Damage 1 H318 Skin Sens. 1 H317
618-939-5		Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1 H317
701-333-0		Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1 H317 Aquatic Chronic 3 H412
701-135-4	<i>Proposal:</i> Muta. 2, H341 Repr. 1B, H360F	Muta. 2 H341 Repr. 1B H360, specific effect: Inhibited Reproduction Skin Corr. 1C H314 Eye Damage 1 H318 Skin Sens. 1B H317 Aquatic Acute 2 H401 Aquatic Chronic 2 H411
701-197-2		Muta. 2 H341 Repr. 2 H361 Acute Tox. 4 H302 Skin Irrit. 2 H315 Eye Irrit. 2 H319
947-448-1		-
238-098-4		Acute Tox. 4 H302 Skin Irrit. 2 H315 Skin Sens. 1 H317 Aquatic Chronic 3 H412
236-502-3		Skin Sens. 1A H317 Aquatic Chronic 2 H411
500-070-7		Skin Sens. 1B H317
429-960-2	Acute Tox. 4 * H312 Skin Irrit. 2 H315 Skin Sens. 1 H317	Muta. 2 H341 Acute Tox. 4 H312 Skin Irrit. 2 H315

ASSESSMENT OF REGULATORY NEEDS

EC/ List No	Harmonised classification	Classification in registrations
	Muta. 2 H341 Aquatic Chronic 3 H412	Eye Irrit. 2 H319 Skin Sens. 1 H317 Aquatic Chronic 2 H411 Aquatic Chronic 3 H412
<b>202-987-5</b>	<i>Proposal:</i> Acute Tox. 4 H302 dermal: ATE = 300 mg/kg (-) oral: ATE = 500 mg/kg (-) Acute Tox. 3 H311 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1 H317 Muta. 2 H341 Carc. 1B H350 Aquatic Chronic 3 H412	Carc. 2 H351 Muta. 2 H341 Acute Tox. 4 H302 Acute Tox. 4 H312 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1A H317 STOT Rep. Exp. 2 H373, affected organs: Forestomach STOT Rep. Exp. 1 H372 Aquatic Chronic 2 H411
<b>440-920-3</b>		Acute Tox. 4 H302 Repr. 2 H361]
<b>413-900-7</b>	Skin Sens. 1 H317 Carc. 2 H351	Carc. 2 H351 Skin Sens. 1 H317
<b>942-639-6</b>		Aquatic Chronic 4 H413
<b>441-520-1</b>		-
<b>225-716-2</b>		Muta. 2 H341 Acute Tox. 4 H302 Skin Sens. 1A H317 STOT Rep. Exp. 2 H373 Aquatic Chronic 3 H412
<b>275-662-9</b>		Muta. 2 H341 Acute Tox. 4 H302 Skin Sens. 1A H317 STOT Rep. Exp. 2 H373 Aquatic Chronic 3 H412
<b>610-764-2</b>		Muta. 2 H341 Eye Irrit. 2 H319 Skin Sens. 1B H317]
<b>248-893-8</b>		-
<b>241-536-7</b>		

(\*) 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 24 March 2021.

### Glycidyl esters, Glycidyl ethers - Short-chain aliphatic monoglycidyl ethers (alkyl chain C3-C4):

EC number	203-441-9	413-660-3	247-979-2	244-435-6	696-026-0	940-592-6	223-672-9	203-442-4	219-376-4	231-640-0	223-303-1
PC 35: Washing and cleaning products							I, F, <b>P</b>			I, F, <b>P</b>	
PC 32: Polymer preparations and compounds	I, F, <b>A?</b>		I		I, F		I, F	I	F		
PC 1: Adhesives, sealants			I, F, <b>P</b>			I			I, <b>P</b>		
PC 9b: Fillers, putties, plasters, modelling clay									F		
PC 9a: Coatings and paints, thinners, paint removes			I, <b>P</b>		I	I, F	I, F		<b>C</b>		
PC 21: Laboratory chemicals							I, F				
PC 26: Paper and board treatment products				I							
PC 19: intermediate	I, F	I	I			I		I	I		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.

ASSESSMENT OF REGULATORY NEEDS

Glycidyl ethers - Long-chain aliphatic monoglycidyl ethers (alkyl chain >C5), Glycidyl ethers - Aromatic monoglycidyl ethers:

Substance	271-846-8	701-328-3	219-553-6	271-845-2	268-358-2	262-268-7	700-630-2	240-104-5	814-125-0	219-555-7	204-557-2	218-645-3	221-453-2	500-210-7	218-644-8	245-052-7	260-353-3	613-981-0	937-989-1
PC 24: Lubricants			F, <b>P, C</b>																
PC 32: Polymer preparations and compounds	I, F, <b>P, C</b>	I, F	F									I, F	F, <b>P</b>						
PC 1: Adhesives, sealants	I, F, <b>P, C</b>	I, F, <b>P, C</b>	I, <b>P</b> , <b>C</b>									I, <b>P</b>	I, F, <b>P</b>	I, F, <b>P</b>					
PC 9b: Fillers, putties, plasters, modelling clay	I, F, <b>P, C</b>	I, F, <b>P, C</b>	I, <b>P</b> , <b>C</b>									I, <b>P</b>	I, F, <b>P</b>						
PC 9a: Coatings and paints, thinners, paint removes	I, F, <b>P, C</b>	I, F, <b>P, C</b>	I, <b>P</b> , <b>C</b>									I, <b>P</b>	I, F, <b>P, C</b>	I, F, <b>P</b>					
PC 18: Ink and toners	<b>P</b>		I																
PC 21: Laboratory chemicals	<b>P</b>		I											F					
PC 19: intermediate		I	I	I	I	I	I	I	I	I	I	I			I	I	I	I	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.

ASSESSMENT OF REGULATORY NEEDS

Glycidyl ethers - Aliphatic polyglycidyl ethers, Glycidyl ethers - Aromatic polyglycidyl ethers, Glycidyl ethers - Aromatic glycidyl ethers with amine/amide functionalities:

Substance	218-746-2	219-371-7	618-939-5	701-333-0	701-135-4	701-197-2	238-098-4	236-502-3	500-070-7	947-448-1	429-960-2	202-987-5	440-920-3	942-639-6	441-520-1	225-716-2	275-662-9	610-764-2	248-893-8	
PC 15: Non-metal-surface treatment products			I, F, P			I, F			I, F, P			I								
PC 32: Polymer preparations and compounds	I	I, F, P, C	F		I	I, F	I, F,	I, F, P			I, F, P	F		I, F	I, A					
PC 1: Adhesives, sealants		I, F, P, C	I, F, P, C	P	P	I	I, F,	I, F, P	I, F, P, C		I, F, P	I, F, P				I, F	I, F			
PC 9b: Fillers, putties, plasters, modelling clay		I, F, P, C	I, F, P, C	P			I, F,	P	I, F, P, C											
PC 9a: Coatings and paints, thinners, paint removes		I, F, P, C	I, F, P, C	I, F, P			I, C	I, P	I, F, P, C			I, F, P				I				
PC 21: Laboratory chemicals									I							I				
PC 19: intermediate					I		I			I			I			I		I	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 4 March 2021.

EC/List number	RMOA	Authorisation		Restriction*		CLH	Actions not under REACH/ CLP
		Candidate list	Annex XIV	Annex XVII	Annex VI (CLP)		
202-987-5						YES	
203-441-9						YES	
203-442-4						YES	
204-557-2						YES	
218-645-3						YES	
219-376-4						YES	
240-260-4	YES						
247-979-2						YES	
413-900-7						YES	
429-960-2						YES	
701-135-4						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 the other substances.