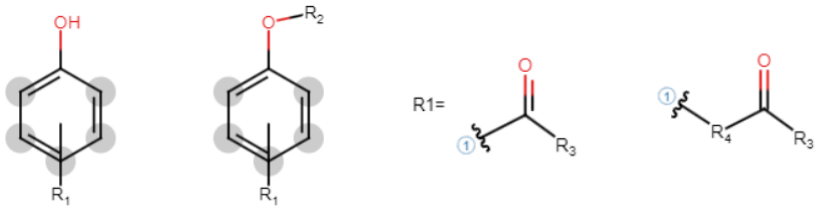
Assessment of regulatory needs

Authority: European Chemicals Agency (ECHA)

Group Name: Hydroxy and alkoxy phenylketones

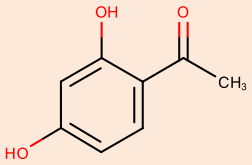
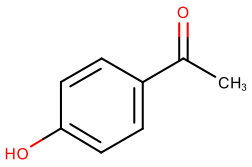
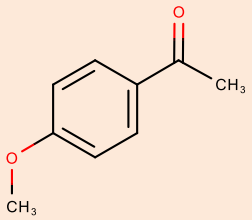
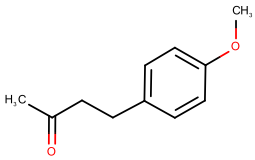
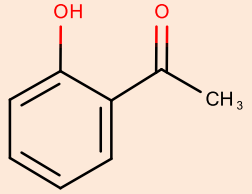
General structure:



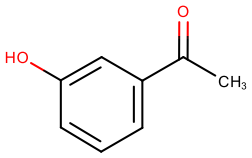
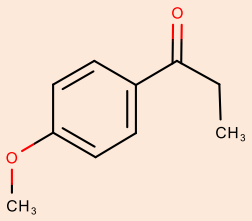
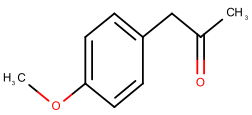
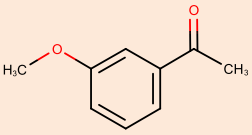
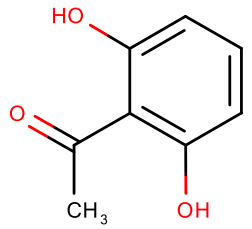
Revision history

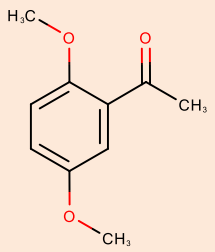
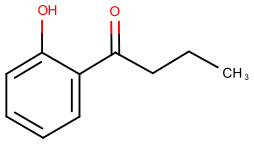
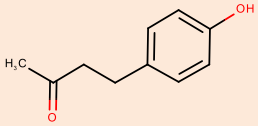
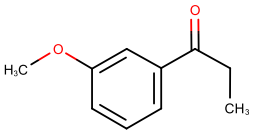
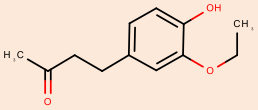
Version	*Date*	*Description*
1.0	17 April 2023	

Substances within this group:

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) [1]
201-945-3	89-84-9	2',4'-dihydroxyacetophenone		OSII or TII
202-802-8	99-93-4	4'-hydroxyacetophenone		Full, 100-1000
202-815-9	100-06-1	4'-methoxyacetophenone		Full, not (publicly) available
203-184-2	104-20-1	4-(4-methoxyphenyl)butan-2-one		Full, 10-100
204-288-0	118-93-4	2'-hydroxyacetophenone		OSII or TII

[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	Chemical structures	Registration type (full, OSII or TII, NONS), highest tonnage band among all the registrations (t/y) [1]
204-494-0	121-71-1	3'-hydroxyacetophenone		Full, not (publicly) available
204-512-7	121-97-1	p-methoxypropiophenone		OSII or TII
204-578-7	122-84-9	4-methoxyphenylacetone		OSII or TII
209-573-3	586-37-8	3-methoxyacetophenone		Full, not (publicly) available
211-833-6	699-83-2	2',6'-dihydroxyacetophenone		OSII or TII

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) [1]
214-858-0	1201-38-3	2',5'-dimethoxyacetophenone		OSII or TII
220-749-9	2887-61-8	2'-hydroxybutyrophenone		OSII or TII
226-806-4	5471-51-2	4-(4-hydroxyphenyl)butan-2-one		Full, 100-1000
253-729-3	37951-49-8	3'-methoxypropiophenone		OSII or TII
***810-128-6** **933-435-8**	569646-79-3	4-(3-ethoxy-4-hydroxyphenyl)butan-2-one		C&L notification

* Based on substance identifiers and information included in submission dossiers, in this Group the following are considered duplicate entries: EC 810-128-6 and EC 933-435-8.

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

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[2].

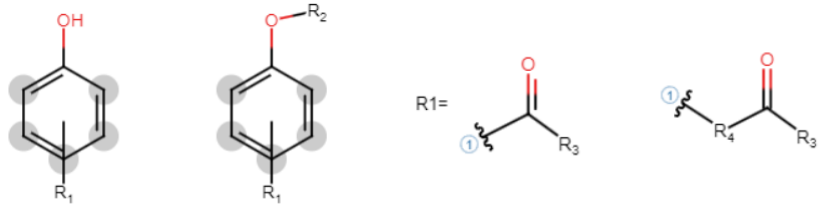
[2] https://echa.europa.eu/understanding-assessment-regulatory-needs

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
PMT/vPvM	Persistent, mobile and toxic/very persistent and very mobile
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 hydroxy and alkoxy phenylketone moiety shown in the figure below.



The group consists of 16 substances, out of which 6 have a full REACH registration, 8 are intermediates, and two are C&L notified substances.

Based on information reported in the REACH registration dossiers, most of the substances in the group have industrial, widespread professional and consumer uses. They are used mainly as odour agents, precursors for the production of other chemicals, wetting agents in washing and cleaning, biocidal products (e.g., disinfectants, pest control), perfumes, fragrances, air care products, cosmetics and personal care products, polishes and wax blends, coatings and paints, thinners, paint removers. For two substances EC 204-494-0 and EC 209-573-3, only industrial uses as intermediate or laboratory chemical are reported. The substance List 933-435-8 is listed in Annex V to the Regulation EC No 1223/2009 on preservatives allowed in cosmetic products.

High exposure potential and release in the environment can be expected for most of the fully registered substances in the group, except for EC 204-494-0 and EC 209-573-3.

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

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

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

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

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

Based on ECHA's assessment of hazard information currently available in the registration dossiers, no potential hazards were identified for human health. These conclusions are based on available repeated dose, skin sensitisation, mutagenicity (including in vitro mutagenicity studies in bacteria and mammalian cells), and reproductive toxicity data, none of them indicating hazardous effects, including endocrine-mediated effects for any of the substances in the group. Mutagenicity studies have been conducted on the six substances with full registrations, all showing negative results. The available sub-acute/reproductive toxicity screening studies conducted on two of the substances (EC 202-802-8 and 203-184-2) do not show target organ or reprotoxic effects at the tested doses (up to 600 mg/kg bw/day). Absence of effects was also reported in the only sub-chronic study (on EC 202-802-8), but the tested doses were low. The hazard conclusions are extrapolated to the rest of the group members which do not have repeated dose or reproductive toxicity data.

Based on ECHA's assessment of hazard information currently available in the registration dossiers, some of the substances in the group have the following known/potential environmental hazard: aquatic toxicity (EC 202-802-8, 209-573-3, 226-806-4, 214-858-0). EC 202-802-8, 209-573-3 and 214-858-0, have a self-classification in their registrations as Aquatic Chronic 3. Based on available information, the self-classification of Aquatic Chronic 3 can be confirmed for EC

202-802-8, only. However, for EC 226-806-4, there are no long-term toxicity studies on fish and aquatic invertebrates available in the registration dossier and for EC 202-802-8, there is no long-term fish toxicity information available. There are no environmental study results indicating endocrine-mediated effects for any of the substances in the group.

EC 202-802-8, 209-573-3 and 226-806-4 are fully registered with a broad range of uses, and a high exposure potential and release in the environment is assumed. For industrial and professional uses, consistent self-classification by registrants should trigger 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 the substances. EC 214-858-0 is used as an intermediate under strictly controlled conditions (registration Art 17/18), so a low potential for exposure to both human health and environment is expected.

The substances in this group are unlikely to fulfil the PBT/vPvB screening criteria, because they are readily biodegradable and have a low potential for bioaccumulation. These conclusions are based on the information currently available in the registration dossiers (ready biodegradability test results, log Kow <3).

Likewise, the substances in this group are unlikely to fulfil the PMT/vPvM screening criteria, because whilst they are considered mobile based on log Koc <3, they are readily biodegradable.

Considering the overall uncertainty on the hazard conclusions based on low data density, compliance check on ECs 202-802-8, 202-815-9 and 226-806-4 is suggested to generate data and/or confirm low hazard.

It is expected that following data generation registrants would adequately self-classify the substances and recommend necessary RMMs to ensure safe use. Therefore, it is proposed that there is currently no need for EU-wide regulatory risk management. It is worth noting however that the need for further regulatory action will be reconsidered if there is a change in the registration status or more severe hazards are confirmed. This is linked to the wide-dispersive uses of the substances. If the registration status changes for the following substances used as intermediates under strictly controlled conditions (registration Art 17/18) (EC 204-288-0, 201-945-3, 204-512-7, 211-833-6, 214-858-0, 220-749-9) or for the C&L notified substances (List 810-128-6 & 933-435-8 (duplicates)), 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
202-802-8 226-806-4 202-815-9 214-858-0 209-573-3	No hazard or unlikely hazard	Known or potential hazard for aquatic toxicity except for EC 202-815-9	Industrial, widespread professional and consumer uses for the fully registered substances (except for EC 204-494-0 and EC 209-573-3) mainly as odour agents, precursors, wetting agents in washing and cleaning, biocidal products (e.g., disinfectants, pest control), perfumes, fragrances, air care products, cosmetics and personal care products, polishes and wax blends, coatings and paints,	**Currently no need for EU RRM** <u>Justification</u>: Overall, no or unlikely hazard that would lead to concern for the reported uses. Self-classification followed by recommendation and implementation of necessary RMMs should be sufficient to ensure safe use. Actions will be re-considered when the	CCH for ECs 202-802-8, 226-806-4, 202-815-9
204-494-0 201-945-3 203-184-2 204-288-0 204-512-7 204-578-7 211-833-6 220-749-9	No hazard or unlikely hazard	No hazard or unlikely hazard			

EC/List number	Human Health Hazard	Environmental Hazard	Relevant use(s) & exposure potential	Last foreseen action	Action
253-729-3 810-128-6 933-435-8			thinners, paint removers. High exposure potential and release in the environment can be expected only for the mentioned fully registered substances in the group.	assessment will be revisited.	

Annex 1: Overview of classifications

Data extracted on 23.11.2022

EC/ List No	CAS No	Substance name	Harmonised classification	Classification in registrations
201-945-3	89-84-9	2',4'-dihydroxyacetophenone	-	STOT Single Exp. 3 H335, affected organs: Respiratory system Eye Damage 1 H318 Skin Irrit. 2 H315
202-802-8	99-93-4	4'-hydroxyacetophenone	-	Eye Irrit. 2 H319 Eye Irrit. 2A H319 Aquatic Chronic 3 H412
202-815-9	100-06-1	4'-methoxyacetophenone	-	Acute Tox. 4 H302 Skin Irrit. 2 H315 Eye Irrit. 2 H319
203-184-2	104-20-1	4-(4-methoxyphenyl)butan-2-one	-	-
204-288-0	118-93-4	2'-hydroxyacetophenone	-	-
204-494-0	121-71-1	3'-hydroxyacetophenone	-	Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1 H317 STOT Single Exp. 3 H335, affected organs: respiration organs
204-512-7	121-97-1	p-methoxypropiophenone	-	-
204-578-7	122-84-9	4-methoxyphenylacetone	-	-
209-573-3	586-37-8	3-methoxyacetophenone	-	Acute Tox. 4 H302 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Aquatic Chronic 3 H412

EC/ List No	CAS No	Substance name	Harmonised classification	Classification in registrations
211-833-6	699-83-2	2',6'-dihydroxyacetophenone	-	STOT Single Exp. 3 H335 Skin Irrit. 2 H31 Eye Irrit. 2 H319
214-858-0	1201-38-3	2',5'-dimethoxyacetophenone	-	Acute Tox. 4 H302 Eye Irrit. 2 H319 Aquatic Chronic 3 H412
220-749-9	2887-61-8	2'-hydroxybutyrophenone	-	Skin Irrit. 2 H315 Eye Irrit. 2 H319 STOT Single Exp. 3 H335, affected organs: High respiratory tract Acute Tox. 4 H302
226-806-4	5471-51-2	4-(4-hydroxyphenyl)butan-2-one	-	Acute Tox. 4 H302
253-729-3	37951-49-8	3'-methoxypropiophenone	-	-
810-128-6	-	810-128-6	-	-
933-435-8	569646-79-3	4-(3-ethoxy-4-hydroxyphenyl)butan-2-one	-	-

Annex 2: Overview of uses[3] based on information available in registration dossiers

Data extracted on 23.11.2022

Main types of applications structured by product or article types	EC 202-802-8	EC 202-815-9	EC 203-184-2	EC 204-494-0	EC 204-578-7	EC 209-573-3	EC 226-806-4
PC 27: Plant protection products							F
PC 35: Washing and cleaning products		I, **P**, **C**	F, I, **P**, **C**		I, **P**		I, **P**, **C**
PC 8: Biocidal products (e.g. disinfectants, pest control)		**C**	F, **C**		**C**		**C**
PC 28: Perfumes, fragrances	F, **C**	F, **C**	F, I, **C**		F, **C**		F, **C**
PC 3: Air care products		**C**	F, **C**		**C**		**C**
PC 39: Cosmetics, personal care products	F, **C**	**P**, **C**	**C**		**C**		**C**
PC 29: Pharmaceuticals			I			F	F, I
PC 31: Polishes and wax blends		**P**, **C**	F, **P**, **C**		**P**, **C**		**P**, **C**
PC 9a: Coatings and paints, thinners, paint removes			I, **P**, **C**				
PC 18: Ink and toners			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

[3] The table doesn't include the substances with Art 17/18 intermediate registrations only

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

Data extracted on 30.11.2022

EC/List number	RMOA	Authorisation		Restriction	CLH	Actions not under REACH/ CLP
		Candidate list	Annex XIV	Annex XVII	Annex VI (CLP)	
933-435-8						Cosmetics*

*The substance is allowed as . (preservative in cosmetic products but conditions of use may apply (EC No 1223/2009, Annex V).

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