SUBSTANCE EVALUATION CONCLUSION

as required by REACH Article 48

and

EVALUATION REPORT

for

EDDHMA-FeK

(Iron complexes with N,N'-1,2-ethanediylbis{N-[(2-hydroxyphenyl)methyl]glycine} derivatives)

EC No 405-420-1

CAS RN -

Evaluating Member State(s): Sweden

Dated: 17 March 2022

Evaluating Member State Competent Authority

Swedish Chemicals Agency
Box 2
SE-171 13 Sundbyberg
Tel: +46 8 51941100
Fax: +46 8 7357698
Email: kemi@kemi.se
Website: http://www.kemi.se/en

Year of evaluation in CoRAP: 2021

The evaluating member State concluded the evaluation without any further need to ask more information from the registrants under Article 46(1) decision.

Further information on registered substances here:

http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances

DISCLAIMER

This document has been prepared by the evaluating Member State as a part of the substance evaluation process under the REACH Regulation (EC) No 1907/2006. The information and views set out in this document are those of the author and do not necessarily reflect the position or opinion of the European Chemicals Agency or other Member States. The Agency does not guarantee the accuracy of the information included in the document. Neither the Agency nor the evaluating Member State nor any person acting on either of their behalves may be held liable for the use which may be made of the information contained therein. Statements made or information contained in the document are without prejudice to any further regulatory work that the Agency or Member States may initiate at a later stage.

Foreword

Substance evaluation is an evaluation process under REACH Regulation (EC) No. 1907/2006. Under this process the Member States perform the evaluation and ECHA secretariat coordinates the work. The Community rolling action plan (CoRAP) of substances subject to evaluation, is updated and published annually on the ECHA web site[1].

Substance evaluation is a concern driven process, which aims to clarify whether a substance constitutes a risk to human health or the environment. Member States evaluate assigned substances in the CoRAP with the objective to clarify the potential concern and, if necessary, to request further information from the registrant(s) concerning the substance. If the evaluating Member State concludes that no further information needs to be requested, the substance evaluation is completed. If additional information is required, this is sought by the evaluating Member State. The evaluating Member State then draws conclusions on how to use the existing and obtained information for the safe use of the substance.

This Conclusion document, as required by Article 48 of the REACH Regulation, provides the final outcome of the Substance Evaluation carried out by the evaluating Member State. The document consists of two parts i.e. A) the conclusion and B) the evaluation report. In the conclusion part A, the evaluating Member State considers how the information on the substance can be used for the purposes of regulatory risk management such as identification of substances of very high concern (SVHC), restriction and/or classification and labelling. In the evaluation report part B the document provides explanation how the evaluating Member State assessed and drew the conclusions from the information available.

With this Conclusion document the substance evaluation process is finished and the Commission, the Registrant(s) of the substance and the Competent Authorities of the other Member States are informed of the considerations of the evaluating Member State. In case the evaluating Member State proposes further regulatory risk management measures, this document shall not be considered initiating those other measures or processes. Further analyses may need to be performed which may change the proposed regulatory measures in this document. Since this document only reflects the views of the evaluating Member State, it does not preclude other Member States or the European Commission from initiating regulatory risk management measures which they deem appropriate.

[1] http://echa.europa.eu/regulations/reach/evaluation/substance-evaluation/community-rolling-action-plan

Contents

Part A. Conclusion

1. CONCERN(S) SUBJECT TO EVALUATION

The group of "Iron complexes with N,N'-1,2-ethanediylbis{N-[(2-hydroxyphenyl) methyl]glycine} derivatives", here referred to as "Fe-complexes", consists of three "Unknown or variable composition, complex reaction products or of biological materials" (UVCB) substances:

- EDDHA-FeNa (EC number 283-044-5)
- HBED-FeK (EC number 938-828-8)
- EDDHMA-FeK (EC number 405-420-1 – also referred to "the Substance" here)

The substances were included in the Community Rolling Action Plan (CoRAP) for Substance Evaluation (SEv) in 2021, by the competent authority of Sweden.

The group of three substances was originally selected for substance evaluation in order to clarify concerns about:

- Suspected reproductive toxicity
- Potential endocrine disruptor
- Suspected sensitiser
- Wide dispersive use, consumer use
- Exposure of workers
- Exposure of environment

During the evaluation no other concern was identified.

2. OVERVIEW OF OTHER PROCESSES / EU LEGISLATION

Not applicable.

3. CONCLUSION OF SUBSTANCE EVALUATION

The evaluation of the available information on the substance EDDHMA-FeK (EC number 405-420-1) has led the evaluating Member State to the following conclusion:

Table 1

CONCLUSION OF SUBSTANCE EVALUATION Conclusions	
Need for follow-up regulatory action at EU level	
Harmonised Classification and Labelling	
Identification as SVHC (authorisation)	
Restrictions	
Other EU-wide measures	
No need for regulatory follow-up action at EU level	X

The concern for reproductive toxicity, specifically for development and developmental neuro- and immunotoxicity, was substantiated during the SEv for all the substances in the group. However, information was not sufficient to conclude on the concern.

Also, data gaps for standard information requirements were identified for the substances in the group. Since reproductive toxicity is a standard data requirement for the Registrant(s) of the substances at Annex IX, the group was handed over to ECHA to request this information under compliance check (CCH). Also, information on skin sensitisation was identified as a data gap to be addressed under CCH.

EDDHMA-FeK (EC number 405-420-1) is a former notified substance (NONS). After assessment of its registration status, it was concluded that it could not be addressed under CCH. For the two other substances in the group, CCH was started in 2021 and is currently ongoing.

Further, in March 2021, the Registrant(s) of EDDHA-FeNa (EC number 283-044-5) and HBED-FeK (EC number 938-828-8), informed the evaluating MSCA that reproductive toxicity screening studies, according to the OECD TG 422, were planned to be started in 2021 with the substances.

The upcoming data on the similar substances generated via CCH and/or by the Registrants, may be used to clarify the concern and for regulatory risk management for EDDHMA-FeK.

4. FOLLOW-UP AT EU LEVEL

4.1. Need for follow-up regulatory action at EU level

Not applicable.

5. CURRENTLY NO FOLLOW-UP FORESEEN AT EU LEVEL

5.1. No need for regulatory follow-up at EU level

Table 2

REASON FOR REMOVED CONCERN The concern could be removed because	
Clarification of hazard properties/exposure	
Actions by the registrants to ensure safety, as reflected in the registration	
Currently, no regulatory follow-up at EU-level. Reproductive toxicity was the main concern under SEv. The evaluating MSCA concluded that further information is needed to clarify the concern. The conclusion on possible regulatory follow-up awaits the upcoming data on the other substances in the group.	X

5.2. Other actions

Not applicable.

6. TENTATIVE PLAN FOR FOLLOW-UP ACTIONS (IF NECESSARY)

Not applicable.

Part B. Substance evaluation

7. EVALUATION REPORT

7.1. Overview of the substance evaluation performed

The group of "Iron complexes with N,N'-1,2-ethanediylbis{N-[(2-hydroxyphenyl) methyl]glycine} derivatives", here referred to as "Fe-complexes", consists of three "Unknown or variable composition, complex reaction products or of biological materials" (UVCB) substances:

- EDDHA-FeNa (EC number 283-044-5)
- HBED-FeK (EC number 938-828-8)
- EDDHMA-FeK (EC number 405-420-1 – also referred to as "the Substance" here)

The substances were included in the Community Rolling Action Plan (CoRAP) for Substance Evaluation (SEv) in 2021, by the competent authority of Sweden.

The group of three substances was originally selected for substance evaluation in order to clarify concerns about:

- Suspected reproductive toxicity
- Potential endocrine disruptor
- Suspected sensitiser
- Wide dispersive use, consumer use
- Exposure of workers
- Exposure of environment

During the evaluation no other concern was identified.

Table 3

EVALUATED ENDPOINTS	
Endpoint evaluated	**Outcome/conclusion**
Reproductive toxicity Fertility and development	Concern unresolved. Pending data generated via CCH or by the Registrants with EDDHA-FeNa.
Endocrine disruption Human health	Concern unresolved. Pending data generated via CCH or by the Registrants with EDDHA-FeNa.
Suspected sensitiser	Concern unresolved. Pending data generated via CCH with EDDHA-FeNa.
Wide dispersive use, consumer use	Concern refuted based on the existing data.
Exposure of workers	Concern refuted based on the existing data.
Exposure of environment	Concern refuted based on the existing data.

7.2. Procedure

The group of Fe-complexes, consisting of the three "Unknown or variable composition, complex reaction products or of biological materials" (UVCB) substances: EDDHA-FeNa (EC number 283-044-5), HBED-FeK (EC number 938-828-8) and EDDHMA-FeK (EC number 405-420-1, here referred to also as the Substance), was included in the Community Rolling Action Plan (CoRAP) for Substance Evaluation (SEv) in 2021, by the competent authority

of Sweden. The scope of the evaluation was human health, targeted to the concern for reproductive toxicity and potential endocrine disrupting properties.

The concern for reproductive toxicity, specifically for development and developmental neuro- and immunotoxicity was substantiated for the substances in the group based on read-across to the available data for the similar substance EDDHMA-FeNa (EC number 283-041-9) and/or publicly available information. However, existing data was not sufficient to conclude on the concern and for appropriate regulatory risk management, i.e. harmonised classification.

The evaluating MSCA concluded that further information on reproductive toxicity, namely an Extended one-generation reproductive toxicity study (EOGRTS) with the developmental neuro- and immunotoxicity cohorts was needed to clarify the concern for reproductive toxicity. Since reproductive toxicity is a standard data requirement for the Registrants of the substances at Annex IX, the group was handed over to ECHA to request the information under compliance check (CCH). Also, information on skin sensitisation was identified as a standard information requirement to be addressed under CCH.

CCH for EDDHA-FeNa and HBED-FeK was initiated in 2021 and is currently ongoing. The Substance subject to this conclusion, EDDHMA-FeK (EC number 405-420-1) is a former notified substance (NONS). After assessment of its registration status, it was concluded that it could not be addressed under CCH.

Consequently, the evaluating MSCA considers that the upcoming data with the similar substances (generated via CCH or by the Registrants) may support to also clarify the identified concerns for EDDHMA-FeK.

7.3. Identity of the substance

Table 4

EDDHMA-FeK: SUBSTANCE IDENTITY	
Public name:	EDDHMAFEK
EC number	405-420-1
CAS number	_
Index number in Annex VI of the CLP Regulation	_
Molecular formula	n.a.
Molecular weight range	n.a.
Synonyms	Potassium [alpha,alpha'-(1,2-ethylenediamine)-bis(2-hydroxy-4-methylbenzeneacetato)] ferrate(1-) EDDHMA-FeK

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

Structural formula: n.a

7.3.1. Grouping and read-across

Group description

The three UVCB substances, EDDHA-FeNa, HBED-FeK and EDDHMA-FeK, subject to the group evaluation are chelating agents for iron (Fe) and used mainly as fertilizers.

The organic part of the substance EDDHA-FeNa consists of ethylenediamine-N,N'-bis(2-hydroxyphenyl) acetic acid (EDDHA). EDDHA is generally produced by the multicomponent reaction of phenol, glyoxalic acid and ethylenediamine. It binds metal ions as a hexadentate ligand, using two amines, two phenolate centres and two carboxylates as the six binding sites. The complex is anionic and forms salts with positive ions, such as Na or K. EDDHA-FeNa and EDDHMA-FeNa consist of the same reaction products except cresol (EC number 203-577-9) versus phenol (EC number 203-468-6) in the composition.

The main constituents of EDDHA-FeNa and EDDHMA-FeNa are the ortho-isomers. These are manufactured as UVCB substances, containing the ortho, ortho- and ortho, para-isomers as the main components. It is suggested that both isomers have the same functionality, i.e. mono- and multivalent metal-ion binding.

The organic part of HBED-FeK consists of N,N'-Bis(2-hydroxybenzyl)ethylenediamine-N,N'-diacetic acid (HBED). HBED is produced by reaction of ethylenediamine, diacetic acid, formaldehyde and phenol. The main constituents of HBED-FeKCl are HBED isomers (range 10-25%). Other constituents in these UVCBs including phenol and ethylene diamine (EC number 203-468-6) are present at lower concentrations.

Table 5

Overview: EDDHA, EDDHMA and HBED derivatives		
UVCB abbreviation (Main constituent)	**EC number**	**CAS number**
EDDHA	214-625-3	1170-02-1
EDDHA-Fe	240-505-5	16455-61-1
EDDHA-FeNa* (EDDHA-FeNa)	283-044-5 (240-505-5)	84539-55-9 16455-61-1
EDDHMA-FeNa (EDDHMA-FeNa)	283-041-9 (408-108-6)	84539-53-7
EDDHMA-FeK*	405-420-1	-
EDDHSA-Fe	283-042-4	84539-54-8
EDDHSA-FeK	462-490-6	-
HBED	700-327-5	1061328-86-6
HBED-FeK* (HBED-FeK)	938-828-8 (616-154-2)	1463474-95-4 74877-84-2

* Substances evaluated under SEv in 2021.

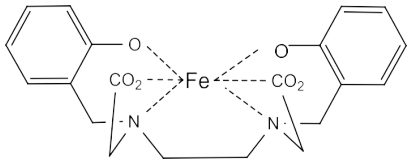
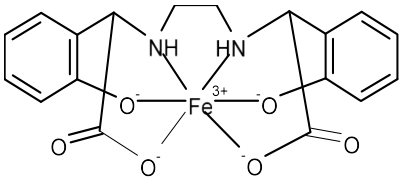
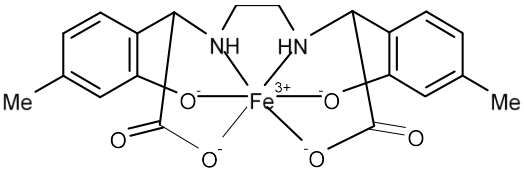
These chelates have structural and functional similarity to the members of the aminocarboxylic acid (ethylenediamine-based) chelates category, including Ethylenediamine tetraacetic acid (EDTA). All members have a molecular structure with an ethylenediamine backbone, which has 2-4 acetic acid or hydroxy functional groups attached to the nitrogens. The ethylenediamine backbone together with multiple functional groups on the amine provides the chelates their unique metal ion binding properties.

Read-across basis

In the registration(s) for EDDHA-FeK and HBED-FeK read-across between the substances In the registration(s) read-across between these substances has been proposed for the (eco)toxicity endpoints. According to the justifications provided, the read-across is based on similarities in structure, physiochemical properties and toxicity profiles. Moreover, data from the similar substances EDDHSA-FeNa and EDDHSA-FeK is taken into account as supporting source substances.

Specifically, justification is provided for read-across:
-From EDDHMA-FeNa (source) to EDDHA-FeNa (target)
-From EDDHMA-FeNa (source) and EDDHA-FeNa (source) to HBED-FeK (target)

Table 6

Structure of the main constituents in the UVCBs	
UVCB Substance (abbreviation) **Main constituent**	**Structure of the main constituent**
HBED-FeKCl, EC number 938-828-8 Bis(2-hydroxybenzyl) ethylenediamine diacetic acid, ferric potassium complex EC number 616-154-2	
EDDHA-FeNa, EC number 283-044-5 Sodium [[α,α'-(ethylenediimino)bis[2-hydroxybenzene-1-acetato]](4-)] ferrate(1-) EC number 240-505-5	
EDDHMA-FeNa, EC number 283-041-9 Sodium (ethylenediiminobis((2-hydroxy-4-tolyl)acetato)) ferrate(1-), EC number 408-180-6	

The source substance EDDHMA-FeNa (currently no active registration) is the methylated form of EDDHA-FeNa. The substances consist of the same reaction products and differ only in the cresol versus phenol group in the composition. As a result, EDDHMA-FeNa is methylated EDDHA-FeNa (Table 6). According to the read-across justification, as methyl groups are considered to be stable and to possess limited reactivity, it is proposed that no significant differences in toxicological properties are expected between EDDHA-FeNa and EDDHMA-FeNa. EDDHMA-FeNa has also been proposed as the source substance for read-across to HBED-FeK. In HBED-FeK the carboxylic arms of the molecule are attached to the amine groups, whereas in EDDHMA-FeNa these are attached to a benzoyl position. This results in tertiary amines in HBED-FeK and secondary amines in EDDHMA-FeNa at the iron binding sites.

Available data indicate that these substances have similar physiochemical properties, including high water solubility, low octanol-water partition coefficient (Pow), no hydrolysis in water and low vapour pressure. These substances are thus expected to behave similarly in aqueous solutions. No toxicokinetics studies are available in the registration(s) for the substances. Instead, predictions of the toxicokinetics behaviour, based on the physicochemical properties and toxicity data of the substances and/or their structurally related substances has been provided.

The available information on toxicity is mainly from the repeated dose toxicity studies with EDDHMA-FeNa and EDDHA-FeNa, including 28-day and 90-day toxicity studies. Based on these studies the hematopoietic system (shown by anaemia) and kidneys are the main target organs.

7.3.1.1.1. Mode-of-Action for toxicity

Limited/no toxicity data is available for HBED-FeK or EDDHMA-FeK. Available studies with EDDHA-FeNa and its similar substances indicate adverse effects, primarily on the hematopoietic system and kidneys. The Mode-of-Action (MoA) for toxicity seems to be iron chelation, consistent with the intrinsic property of the substances. However, there is not sufficient experimental evidence to support a MoA.

Based on the observed toxicity, EDDHA-FeNa and EDDHMA-FeNa seem to be absorbed systemically. It is likely that toxicity is due to disruption of iron homeostasis. Anaemia symptoms suggest that chelates are de-complexed in the body. After de-complexation, chelators free of iron sequester systemically available iron leading to anaemia. The anaemia symptoms, i.e. reduced red blood cells, haemoglobin and haematocrit and findings in kidneys suggest that absorbed chelates compete for the internal pool of iron, complex this iron and are either excreted or redistribute iron to other organs. Similar pathways has been reported for other chelators (Heimbach et al., 2000). It is possible that exposure to these substances could induce a condition similar to thalassemia. Thalassemia patients have reduced blood cell levels, together with hepatic iron overload as the result of frequent blood transfusion or high absorption of dietary iron (Herschko, 2010). Such a condition could be mimicked by high amounts of iron absorbed in from EDDHA-FeNa and EDDHMA-FeNa. In case these substances, when de-complexed in the body compete with e.g. transferrin, excess iron will be redistributed to organs, while released chelators would bind further iron. Thus, the toxicity pattern suggests that when these chelates enter the body they likely become de-complexed from Fe, and then sequester further iron, competing with the endogenous iron-regulating proteins.

Regarding potential binding to metal ions other than iron, it has been shown that EDTA forms complexes with different metals dependent on their affinity constant, pH and concentration of competing metals and/or ligands in the gastrointestinal tract (Heimbach et al., 2000). EDDHA-Fe and EDDHMA-Fe seem to be more stable compounds and thus not expected to bind to other metals as the affinity to iron is very high. No substitution of iron by other metals was shown experimentally, suggesting that these substances have so high affinity to iron leaving other metal levels unaffected (Lopez-Rayo et al., 2009).

Regarding the MoA for toxicity, the evaluating MSCA concludes that the anaemia and kidney toxicity findings in the available repeated dose toxicity studies with EDDHA-FeNa and EDDHMA-FeNa suggest impaired iron balance as a result of exposure to these substances. However, the specific mechanisms leading to toxicity are not clear.

Taken together, the evaluating MSCA concludes that read across between EDDHMA-FeNa, EDDHA-FeNa and EDDHMA-Fek is plausible. However, further supporting information (i.e. "bridging information") would be needed to confirm similar effects.

7.4. Physico-chemical properties

Table 7

OVERVIEW OF PHYSICOCHEMICAL PROPERTIES: EDDHMA-FeNa, EC 405-420-1	
Physical state at 20°C and 101.3 kPa	Solid
Vapour pressure	1 000 Pa at 50 °C
Water solubility	4.4 g/L at 20 °C
Partition coefficient n-octanol/water (Log Kow)	< -2
Flammability	Non flammable
Explosive properties	Non explosive
Oxidising properties	No

7.5. Manufacture and uses

7.5.1. Quantities

Confidential.

7.5.2. Overview of uses

Confidential.

7.6. Classification and Labelling

7.6.1. Harmonised Classification (Annex VI of CLP)

None.

7.6.2. Self-classification

In the registration(s): Confidential

7.7. Environmental fate properties

Not assessed.

7.8. Environmental hazard assessment

Not assessed.

7.9. Human Health hazard assessment

7.9.1. Toxicokinetics

No toxicokinetics studies with the Substance are available.

7.9.2. Acute toxicity and Corrosion/Irritation

Not assessed.

7.9.3. Sensitisation

Not assessed.

The upcoming data with the similar substance EDDHA-FeNa (EC number 283-044-5), via CCH may clarify the concern and be used for a potential harmonised classification proposal for the Substance.

7.9.4. Repeated dose toxicity

No repeated dose toxicity (RDT) studies are available with the Substance.

RDT studies with the similar substances EDDHA-FeNa and EDDHMA-FeNa are available. These studies predate the current test guidelines. Based on these studies the hematopoietic system (shown by anaemia) and kidneys are the main target organs.

Also see section 7.9.7.

7.9.5. Mutagenicity

Not assessed.

7.9.6. Carcinogenicity

Not assessed.

7.9.7. Toxicity to reproduction (effects on fertility and developmental toxicity)

No reproductive toxicity study is available with the Substance.

In March 2021, the Registrant(s) of two of the substances in the group, namely EDDHA-FeNa (EC number 283-044-5) and HBED-FeK (EC number 938-828-8), informed the evaluating MSCA that reproductive toxicity screening studies, according to the OECD TG 422, were planned to be started in 2021 with the substances. In addition, these substances are currently assessed under CCH for data gaps, including information on reproductive toxicity.

The upcoming data on reproductive toxicity of these substances may also clarify the concern and be used for a potential harmonised classification proposal for EDDHMA-FeK.

7.9.8. Hazard assessment of physico-chemical properties

Not assessed.

7.9.9. Selection of the critical DNEL(s)/DMEL(s) and/or qualitative/semi-quantitative descriptors for critical health effects

No DNELs were derived in the registration(s).

The evaluating MSCA notes that once information is available, e.g. from the planned/ongoing studies with the similar substances, DNELs may need to be derived.

7.9.10. Conclusions of the human health hazard assessment and related classification and labelling

Data is currently inconclusive for EDDHMA-FeK.

The upcoming results of the studies with the similar substance EDDHA-FeNa (EC number 283-044-5), via CCH or generated by the registrants, may clarify the concerns for skin sensitisation and reproductive toxicity and may be used for a potential harmonised classification of the Substance.

7.10. Assessment of endocrine disrupting (ED) properties

The substances in the group of "Fe-complexes" were put on CoRAP also with a concern for potential ED properties for human health. The ED concern was based on (i) the observed adverse effects on reproduction, seen in the available One-generation reproductive toxicity study with the similar substance EDDHMA-FeNa and (ii) suspected ED properties of the constituents in the UVCBs.

For EDDHMA-FeK, data is inconclusive. The upcoming data from the studies with the similar substances may clarify the concern and be used for regulatory risk management of the Substance.

7.11. PBT and VPVB assessment

Not assessed.

7.12. Exposure assessment

Not assessed.

The evaluating MSCA did not assess exposure due to missing information on the initial hazard concerns.

7.13. Risk characterisation

Not assessed.

7.14. References

ECHA Guidance (2017) Read-Across Assessment Framework (RAAF) - considerations on multi-constituent substances and UVCBs. ECHA-17-R-04.

Heimbach et al. (2000) Safety Assessment of Iron EDTA [Sodium Iron (Fe3+) Ethylenediaminetetraacetic Acid]: Summary of Toxicological, Fortification and Exposure Data, Food and Chemical Toxicology, 38, 99-111.

Herschko (2010) Pathogenesis and management of iron toxicity in thalassemia. Annals of the New York Academy of Sciences. Volume 1202, Issue 1 p. 1-9.

Lopez-Rayo et al. (2015) Reactivity and effectiveness of traditional and novel ligands for multi-micronutrient fertilization in a calcareous soil. Frontiers in Plant Science, Volume 6, Article 752.

7.15. Abbreviations

AGD	Anogenital distance
CAS	Chemical abstracts service
CCH	Compliance check
CLP	Classification, labelling and packaging (Regulation (EC) No 1272/2008)
CMR	Carcinogenic, Mutagenic or Reprotoxic
CoRAP	Community Rolling Action Plan
CSR	Chemical safety report
DIT	Developmental immunotoxicity
DNEL	Derived no effect level
DNT	Developmental neurotoxicity
ECHA	European Chemicals Agency
ED	Endocrine Disruptor
EDDHA	Ethylenediamine-bis(2-hydroxyphenyl) acetic acid
EDDHMA	Ethylenediamine-di(o-hydroxy methylphenyl) acetic acid
EDTA	Ethylenediaminetetra acetic acid
eMSCA	Evaluating Member State Competent Authority
EOGRTS	Extended one-generation reproductive toxicity study
GI	Gastrointestinal
HBED	Hydroxybenzyl ethylene diamine
HBED-FeK	Hydroxybenzyl ethylene diamine-Iron Potassium
Kow	n-Octanol/Water Partition Coefficient
MCHC	Mean Corpuscular Hemoglobin Concentration
MCV	Mean Corpuscular Volume
MSC	Member State Committee
MSCA	Member State Competent Authority
NOAEL	No observed adverse effect level
NOEL	No observed effect level
NONS	Notification of New Substances
NTP	National Toxicology Program
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative, Toxic
PNDT	Prenatal developmental toxicity
QSAR	Quantitative structure-activity relationship
RAAF	Read-Across Assessment Framework
RAC	Risk Assessment Committee
RDT	Repeated Dose Toxicity
TEDX	The Endocrine Disruption Exchange
UVCB	Unknown or variable composition, complex reaction products or of biological materials