

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Reference number: P0914

Issue date: 28/12/2023 Revision date: 27/11/2023 Supersedes version of: 30/05/2018 Version: 3.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
Trade name	: Picloram
IUPAC name	: 4-amino-3,5,6-trichloropyridine-2-carboxylic acid
EC-No.	: 217-636-1
CAS-No.	: 1918-02-1
Product code	: P0914
Formula	: C ₆ H ₃ Cl ₃ N ₂ O ₂
Synonyms	: 4-amino-3,5,6-trichloropicolinic acid
Product group	: Raw material

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Distributor

Duchefa Biochemie B.V.
A. Hofmanweg 71
2031 BH Haarlem
The Netherlands
T +31(0)23-5319093 - F +31(0)23-5318027
info@duchefa.nl

1.4. Emergency telephone number

Emergency number	: Supplier contact information: +31(0)23-5319093 (M-F 09:00-17:00) +31(0)6-30008100 (outside office hours)
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Country	Organisation/Company	Address	Emergency number	Comment
	World Health Organization world directory of poison centres	http://apps.who.int/poisoncentres/		Consult website for a local poison centre

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazardous to the aquatic environment – Acute Hazard, Category 1H400

Hazardous to the aquatic environment – Chronic Hazard, Category H410

1

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



GHS09

Signal word (CLP) :

: Warning

Hazard statements (CLP) :

: H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) :

: P391 - Collect spillage.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients**3.1. Substances**

Substance type

: Mono-constituent

Name	Product identifier	%
Picloram	CAS-No.: 1918-02-1 EC-No.: 217-636-1	≥ 95

3.2. Mixtures

Not applicable

SECTION 4: First aid measures**4.1. Description of first aid measures**

First-aid measures after inhalation

: Move to fresh air. If you feel unwell, seek medical advice.

First-aid measures after skin contact

: Wash off with soap and plenty of water. Seek medical attention if ill effect or irritation develops.

First-aid measures after eye contact

: Rinse immediately with plenty of water. Seek medical attention if ill effect or irritation develops.

First-aid measures after ingestion

: Rinse mouth. Seek medical attention if ill effect or irritation develops.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable extinguishing media

: Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO₂). Water spray.

Unsuitable extinguishing media

: Strong water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire

: Thermal decomposition generates : - CO_x. - NO_x. HCl.

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5.3. Advice for firefighters

Firefighting instructions : Prevent fire fighting water from entering the environment.
 Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

General measures : Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection. Avoid dust formation. Avoid breathing dust, mist or spray.

6.1.1. For non-emergency personnel

Measures in case of dust release : Use good housekeeping practices to avoid rendering dust airborne.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Sweep up dry powder and dispose properly.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Precautions for safe handling : Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in dry, well-ventilated area. Powder: store at room temperature. Liquid: -25 – -15 °C.

7.3. Specific end use(s)

For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****8.1.1 National occupational exposure and biological limit values****Picloram (1918-02-1)****Belgium - Occupational Exposure Limits**

Local name	Picloram # Picloram
OEL TWA	10 mg/m ³
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021

Croatia - Occupational Exposure Limits

Local name	Pikloram; 4-amino-3,5,6-trikloropiridin-2-karboksilna kiselina
GVI (OEL TWA) [1]	10 mg/m ³

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KGVI (OEL STEL)	20 mg/m ³
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
Denmark - Occupational Exposure Limits	
Local name	Picloram
OEL TWA [1]	10 mg/m ³
Regulatory reference	BEK nr 202 af 21/02/2023
Finland - Occupational Exposure Limits	
Local name	Pikloraami
HTP (OEL TWA) [1]	10 mg/m ³
HTP (OEL STEL)	20 mg/m ³
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveystieteiden ministeriö)
France - Occupational Exposure Limits	
Local name	Piclorame
VME (OEL TWA)	10 mg/m ³
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)
Greece - Occupational Exposure Limits	
Local name	Picloram
OEL TWA	10 mg/m ³
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Ireland - Occupational Exposure Limits	
Local name	Picloram (ISO)
OEL TWA [1]	10 mg/m ³
OEL STEL	20 mg/m ³
Regulatory reference	Chemical Agents Code of Practice 2021
Latvia - Occupational Exposure Limits	
Local name	4-Amino-3, 5, 6-trihlorpikolīnskābe (4-amino-3, 5, 6-trihlorpiridīn-2-karbonskābe, tordons-22k, hloramps)
OEL TWA	2 mg/m ³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92)
Portugal - Occupational Exposure Limits	
Local name	Piclorame
OEL TWA	10 mg/m ³
Remark	A4 (Agente não classificável como carcinogénico no Homem)
Regulatory reference	Norma Portuguesa NP 1796:2014

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Spain - Occupational Exposure Limits	
Local name	Picloram
VLA-ED (OEL TWA) [1]	10 mg/m ³
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
United Kingdom - Occupational Exposure Limits	
Local name	Picloram (ISO)
WEL TWA (OEL TWA) [1]	10 mg/m ³
WEL STEL (OEL STEL)	20 mg/m ³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Píklóram
OEL TWA	10 mg/m ³
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Switzerland - Occupational Exposure Limits	
Local name	Piclorame / Picloram
MAK (OEL TWA) [1]	10 mg/m ³ (i) / (e)
Critical toxicity	Rein, Foie / Niere, Leber
Regulatory reference	www.suva.ch, 01.01.2023
USA - ACGIH - Occupational Exposure Limits	
Local name	Picloram
ACGIH OEL TWA	10 mg/m ³
Remark (ACGIH)	TLV® Basis: Liver & kidney dam. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2023

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

No additional information available

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8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses (to European standard EN 166 or equivalent)

Eye protection			
Type	Field of application	Characteristics	Standard
Safety glasses	Dust		EN 166

8.2.2.2. Skin protection

Skin and body protection:

In case of possible repeated skin contact wear protective clothing

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,11		EN ISO 374

8.2.2.3. Respiratory protection

Respiratory protection:

Where excessive dust may result, wear approved mask. Type P1 (EN 143)

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Beige.
Appearance	: Powder.
Molecular mass	: 241,5 g/mol
Odour	: Not available
Odour threshold	: Not available
Melting point	: 200 °C
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not available
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
pH	: 3 Source: HSDB

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pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Soluble in 1N NaOH. Water: 0,043 g/100ml
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: 0,3 Source: HSDB
Vapour pressure	: 0 mm Hg
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions of storage, handling and use.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Bases. Strong acids and oxidants.

10.6. Hazardous decomposition products

When heated to decomposition, emits dangerous fumes. - COx. - NOx. Hydrogen chloride.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Picloram (1918-02-1)	
LD50 oral rat	4200 mg/kg
LD50 oral	≤
LD50 dermal rabbit	> 4000 mg/kg Source: NITE

Skin corrosion/irritation	: Not classified pH: 3 Source: HSDB
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Serious eye damage/irritation	: Not classified pH: 3 Source: HSDB
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

Picloram (1918-02-1)	
IARC group	3 - Not classifiable
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

11.2. Information on other hazards**11.2.1. Endocrine disrupting properties**

Adverse health effects caused by endocrine disrupting properties : The substance/mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

11.2.2. Other information

Other information : See actual entry in RTECS for complete information: TJ7525000

SECTION 12: Ecological information**12.1. Toxicity**

Hazardous to the aquatic environment, short-term (acute) : Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic) : Very toxic to aquatic life with long lasting effects.

Picloram (1918-02-1)	
LC50 - Fish [1]	2,5 mg/l
EC50 - Crustacea [1]	34,4 mg/l Daphnia magna
EC50 96h - Algae [1]	21,7 mg/l Source: ECOTOX

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Picloram (1918-02-1)	
BCF - Fish [1]	0,93 mg/l Oncorhynchus mykiss (Rainbow trout)
Bioconcentration factor (BCF REACH)	0,15
Partition coefficient n-octanol/water (Log Pow)	0,3 Source: HSDB

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

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12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The substance/mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

12.7. Other adverse effects

Additional information : Avoid release to the environment. Prevent entry to sewers and public waters

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose in a safe manner in accordance with local/national regulations. Avoid release to the environment.
 Sewage disposal recommendations : Do not discharge into drains or the environment.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

ADR	IMDG	IATA
14.1. UN number or ID number		
UN 3077	UN 3077	UN 3077
14.2. UN proper shipping name		
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Picloram)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Picloram)	Environmentally hazardous substance, solid, n.o.s. (Picloram)
Transport document description		
UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Picloram), 9, III, (-)	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Picloram), 9, III, MARINE POLLUTANT	UN 3077 Environmentally hazardous substance, solid, n.o.s. (Picloram), 9, III
14.3. Transport hazard class(es)		
9	9	9
14.4. Packing group		
III	III	III
14.5. Environmental hazards		
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes
No supplementary information available		

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14.6. Special precautions for user**Overland transport**

Classification code (ADR)	: M7
Special provisions (ADR)	: 274, 335, 375, 601
Limited quantities (ADR)	: 5kg
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P002, IBC08, LP02, R001
Special packing provisions (ADR)	: PP12, B3
Mixed packing provisions (ADR)	: MP10
Portable tank and bulk container instructions (ADR)	: T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (ADR)	: TP33
Tank code (ADR)	: SGAV, LGBV
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V13
Special provisions for carriage - Bulk (ADR)	: VC1, VC2
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV13
Hazard identification number (Kemler No.)	: 90
Orange plates	: 
Tunnel restriction code (ADR)	: -
EAC code	: 2Z

Transport by sea

Special provisions (IMDG)	: 274, 335, 966, 967, 969
Limited quantities (IMDG)	: 5 kg
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: LP02, P002
Special packing provisions (IMDG)	: PP12
IBC packing instructions (IMDG)	: IBC08
IBC special provisions (IMDG)	: B3
Tank instructions (IMDG)	: BK1, BK2, BK3, T1
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-F
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW23

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y956
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 956
PCA max net quantity (IATA)	: 400kg
CAO packing instructions (IATA)	: 956
CAO max net quantity (IATA)	: 400kg
Special provisions (IATA)	: A97, A158, A179, A197, A215
ERG code (IATA)	: 9L

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

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SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.1.1. EU-Regulations****REACH Annex XVII (Restriction List)**

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Ensure all national/local regulations are observed.

Germany

Water hazard class (WGK) : Not classified according to Regulation Governing Systems for Handling Substances Hazardous to Waters (AwSV).

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

SZW-lijst van reprotoxische stoffen –

Borstvoeding

SZW-lijst van reprotoxische stoffen –

Vruchtbaarheid

SZW-lijst van reprotoxische stoffen –

Ontwikkeling

DenmarkDanish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product**15.2. Chemical safety assessment**

No additional information available

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SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Packing instructions (ADR)	Added	
	Special packing provisions (ADR)	Added	
	Mixed packing provisions (ADR)	Added	
	Portable tank and bulk container instructions (ADR)	Added	
	Portable tank and bulk container special provisions (ADR)	Added	
	Tank code (ADR)	Added	
	Special provisions for carriage - Packages (ADR)	Added	
	Special provisions for carriage - Bulk (ADR)	Added	
	Special provisions for carriage - Loading, unloading and handling (ADR)	Added	
	Special provisions (IMDG)	Added	
	Excepted quantities (IMDG)	Added	
	IBC packing instructions (IMDG)	Added	
	IBC special provisions (IMDG)	Added	
	Tank instructions (IMDG)	Added	
	Tank special provisions (IMDG)	Added	
	Stowage category (IMDG)	Added	
	Stowage and handling (IMDG)	Added	
	Limited quantities (IMDG)	Added	
	EmS-No. (Fire)	Added	
	EmS-No. (Spillage)	Added	
	Danger labels (IMDG)	Added	
	Proper Shipping Name (IMDG)	Added	
	Proper Shipping Name (IATA)	Added	
	Danger labels (IATA)	Added	
	PCA Excepted quantities (IATA)	Added	
	PCA Limited quantities (IATA)	Added	
	PCA limited quantity max net quantity (IATA)	Added	
	PCA packing instructions (IATA)	Added	
	PCA max net quantity (IATA)	Added	
	CAO packing instructions (IATA)	Added	
	CAO max net quantity (IATA)	Added	

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Indication of changes			
Section	Changed item	Change	Comments
	Special provisions (IATA)	Added	
	ERG code (IATA)	Added	
	Classification code (RID)	Added	
	Packing group (RID)	Added	
	Special provisions (RID)	Added	
	Limited quantities (RID)	Added	
	Excepted quantities (RID)	Added	
	Packing instructions (RID)	Added	
	Special packing provisions (RID)	Added	
	Mixed packing provisions (RID)	Added	
	Portable tank and bulk container instructions (RID)	Added	
	Portable tank and bulk container special provisions (RID)	Added	
	Tank codes for RID tanks (RID)	Added	
	Transport category (RID)	Added	
	Special provisions for carriage – Packages (RID)	Added	
	Special provisions for carriage – Bulk (RID)	Added	
	Special provisions for carriage – Loading, unloading and handling (RID)	Added	
	Colis express (express parcels) (RID)	Added	
	Hazard identification number (RID)	Added	
	Proper Shipping Name (RID)	Added	
	Classification code (ADN)	Added	
	Danger labels (ADN)	Added	
	Limited quantities (ADN)	Added	
	Excepted quantities (ADN)	Added	
	Carriage permitted (ADN)	Added	
	Equipment required (ADN)	Added	
	Number of blue cones/lights (ADN)	Added	
	UN-No. (RID)	Added	
	Vehicle for tank carriage	Added	
	Issue date	Modified	
	Supersedes	Added	
	Revision date	Modified	

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Section	Changed item	Change	Comments
	Adverse health effects caused by endocrine disrupting properties	Added	
	Regulatory framework	Added	
	Substance type	Added	
1.1	Formula	Modified	
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.2	Hazard pictograms (CLP)	Modified	
2.2	Precautionary statements (CLP)	Modified	
2.2	Hazard statements (CLP)	Modified	
3	Composition/information on ingredients	Modified	
4.1	First-aid measures after skin contact	Modified	
4.1	First-aid measures after inhalation	Modified	
4.3	Other medical advice or treatment	Added	
5.1	Unsuitable extinguishing media	Added	
5.2	Hazardous decomposition products in case of fire	Modified	
5.3	EAC code	Added	
6.1	General measures	Modified	
6.2	Environmental precautions	Modified	
8	Regulatory reference	Added	
8	Regulatory reference	Added	
8	Regulatory reference	Added	
8	Regulatory reference	Added	
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8	Regulatory reference	Added	
8	Regulatory reference	Added	
8	Regulatory reference	Added	
8	Regulatory reference	Added	
8.1	WEL TWA (OEL TWA) [1]	Added	
8.1	WEL STEL (OEL STEL)	Added	
8.1	Local name	Added	

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Section	Changed item	Change	Comments
8.1	Critical toxicity	Added	
8.1	MAK (OEL TWA) [1]	Added	
8.1	Local name	Added	
8.1	VLA-ED (OEL TWA) [1]	Added	
8.1	Local name	Added	
8.1	OEL TWA	Added	
8.1	Remark	Added	
8.1	Local name	Added	
8.1	OEL TWA	Added	
8.1	Local name	Added	
8.1	OEL TWA [1]	Added	
8.1	OEL STEL	Added	
8.1	Local name	Added	
8.1	OEL TWA	Added	
8.1	Local name	Added	
8.1	OEL TWA	Added	
8.1	Local name	Added	
8.1	Remark	Added	
8.1	VME (OEL TWA)	Added	
8.1	Local name	Added	
8.1	HTP (OEL STEL)	Added	
8.1	HTP (OEL TWA) [1]	Added	
8.1	Local name	Added	
8.1	OEL TWA [1]	Added	
8.1	Local name	Added	
8.1	KGVI (OEL STEL)	Added	
8.1	GVI (OEL TWA) [1]	Added	
8.1	Local name	Added	
8.1	OEL TWA	Added	
8.1	Local name	Added	
8.1	ACGIH OEL TWA	Added	
8.1	Remark (ACGIH)	Added	
8.1	Local name	Added	
8.2	Environmental exposure controls	Added	
8.2	Respiratory protection	Modified	
8.2	Skin and body protection	Modified	

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Indication of changes			
Section	Changed item	Change	Comments
9.1	Vapour pressure	Added	
9.1	Solubility in water	Added	
9.1	pH	Added	
9.1	Log Pow	Added	
9.1	Colour	Modified	
10.6	Hazardous decomposition products	Modified	
11.1	ATE CLP (oral)	Added	
11.1	IARC group	Added	
11.1	LD50 oral	Added	
11.1	LD50 oral rat	Modified	
11.1	LD50 dermal rabbit	Modified	
12.1	LC50 fish 1	Added	
12.1	EC50 96h algae (1)	Added	
12.1	EC50 - Crustacea [1]	Modified	
12.3	Log Pow	Added	
12.3	Bioconcentration factor (BCF REACH)	Added	
12.3	BCF - Fish [1]	Modified	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	
13.1	Sewage disposal recommendations	Added	
14.1	UN-No. (IATA)	Added	
14.1	UN-No. (IMDG)	Added	
14.1	UN-No. (ADR)	Added	
14.1	UN-No. (ADN)	Added	
14.2	Proper Shipping Name (ADN)	Added	
14.2	Proper Shipping Name (ADR)	Added	
14.3	Danger labels (RID)	Added	
14.3	Danger labels (ADR)	Added	
14.3	Class (ADR)	Added	
14.4	Packing group (IMDG)	Added	
14.4	Packing group (IATA)	Added	
14.4	Packing group (ADN)	Added	
14.4	Packing group (ADR)	Added	
14.6	Packing instructions (IMDG)	Added	
14.6	Special packing provisions (IMDG)	Added	
14.6	Special provisions (ADN)	Added	

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Indication of changes			
Section	Changed item	Change	Comments
14.6	Additional requirements/Remarks (ADN)	Added	
14.6	Transport category (ADR)	Added	
14.6	Special provisions (ADR)	Added	
14.6	Excepted quantities (ADR)	Added	
14.6	Limited quantities (ADR)	Added	
14.6	Tunnel restriction code (ADR)	Added	
14.6	Hazard identification number (Kemler No.)	Added	
14.6	Classification code (ADR)	Added	

Abbreviations and acronyms:	
ATE	Acute Toxicity Estimate
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substances Directive 67/548/EEC
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SDS	Safety Data Sheet

Data sources : ECHA (European Chemicals Agency). Manufacturer.

Full text of H- and EUH-statements:	
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Safety Data Sheet (SDS), EU Duchefa 2023

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.