

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

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

1.1 Product identifier

Bio-Circle STAR US 1

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

Relevant identified uses

PC 35 - Washing and cleaning products

1.3 Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

Bio-Circle Surface Technology GmbH

Street : Berensweg 200

Postal code/city : 33334 Gütersloh

Telephone : +49 5241 9443 0

Telefax : +49 5241 9443 44

Information contact : labor@bio-circle.de

1.4 Emergency telephone number

+49 5241 9443 51 during normal office hours
(Monday to Thursday from 8 am to 4 pm and Friday from 8 am to 3 pm)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Met. Corr. 1 ; H290 - Corrosive to metals : Category 1 ; May be corrosive to metals.

Skin Irrit. 2 ; H315 - Skin corrosion/irritation : Category 2 ; Causes skin irritation.

Eye Irrit. 2 ; H319 - Serious eye damage/eye irritation : Category 2 ; Causes serious eye irritation.

2.2 Label elements

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

Hazard pictograms



Exclamation mark (GHS07)

Signal word

Warning

Hazard statements

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302+P352 IF ON SKIN: Wash with plenty of water/....

P390 Absorb spillage to prevent material damage.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

PHOSPHORIC ACID ; REACH No. : 01-2119485924-24-XXXX ; EC No. : 231-633-2; CAS No. : 7664-38-2

Weight fraction : $\geq 10 - < 25 \%$

Classification 1272/2008 [CLP] : Met. Corr. 1 ; H290 Skin Corr. 1B ; H314 Eye Dam. 1 ; H318
Substance with a common (EC) occupational exposure limit value.

Specific Conc. Limits : Eye Dam. 1 ; H318: C $\geq 25 \%$ • Skin Corr. 1B ; H314: C $\geq 25 \%$ • Skin Corr. 1C ;
H314: C $\geq 25 \%$ • Eye Irrit. 2 ; H319: C $\geq 10 \%$ • Skin Irrit. 2 ; H315: C $\geq 10 \%$

2-BUTOXYETHANOL ; REACH No. : 01-2119475108-36-XXXX ; EC No. : 203-905-0; CAS No. : 111-76-2

Weight fraction : $\geq 1 - < 5 \%$

Classification 1272/2008 [CLP] : Acute Tox. 4 ; H302 Acute Tox. 4 ; H332 Skin Irrit. 2 ; H315 Eye Irrit. 2 ; H319
Substance with a common (EC) occupational exposure limit value.

Specific Conc. Limits : (ATE - oral : 12000 mg/kg)

Additional information

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice. Never give anything by mouth to an unconscious person or a person with cramps.

Following inhalation

In case of respiratory tract irritation, consult a physician.

In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Rub greasy ointment into the skin.

After eye contact

Protect uninjured eye. In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Rinse mouth thoroughly with water. Let 1 glass of water be drunken in little sips (dilution effect). Do NOT induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Causes serious eye irritation. Causes skin irritation.

4.3 Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water Foam Extinguishing powder Carbon dioxide (CO₂) Sand Nitrogen Extinguishing blanket

Unsuitable extinguishing media

Full water jet

5.2 Special hazards arising from the substance or mixture

Safety Data Sheet

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Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

Hazardous combustion products

In case of fire may be liberated: Carbon monoxide , Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

5.4 Additional information

The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings. Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Special danger of slipping by leaking/spilling product.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

6.3 Methods and material for containment and cleaning up

Clear spills immediately. Wipe up with absorbent material (eg. cloth, fleece). Wash with plenty of water. Treat the recovered material as prescribed in the section on waste disposal.

6.4 Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep container tightly closed.

7.2 Conditions for safe storage, including any incompatibilities

P234 - Keep only in original packaging. P406 - Store in a corrosion resistant/... container with a resistant inner liner. Keep/Store only in original container. Protect against : Frost .

Hints on joint storage

Storage class (TRGS 510) : 8B

7.3 Specific end use(s)

Observe technical data sheet. Observe instructions for use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

PHOSPHORIC ACID ; CAS No. : 7664-38-2

Limit value type (country of origin) :	TRGS 900 (D)
Parameter :	E: inhalable fraction
Limit value :	2 mg/m ³
Peak limitation :	2(l)
Remark :	Y
Version :	27.10.2020
Limit value type (country of origin) :	STEL (EC)
Limit value :	2 mg/m ³
Version :	20.06.2019
Limit value type (country of origin) :	TWA (EC)
Limit value :	1 mg/m ³
Version :	20.06.2019

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

2-BUTOXYETHANOL ; CAS No. : 111-76-2
Limit value type (country of origin) : TRGS 900 (D)
Limit value : 10 ppm / 49 mg/m³
Peak limitation : 2(II)
Remark : H,Y
Version : 27.10.2020
Limit value type (country of origin) : STEL (EC)
Limit value : 50 ppm / 246 mg/m³
Remark : Skin
Version : 20.06.2019
Limit value type (country of origin) : TWA (EC)
Limit value : 20 ppm / 98 mg/m³
Remark : Skin
Version : 20.06.2019

Biological limit values

2-BUTOXYETHANOL ; CAS No. : 111-76-2
Limit value type (country of origin) : TRGS 903 (D)
Parameter : Butoxy acetic acid / Urine (U) / At long term exposure: after several previous shifts
Limit value : 100 mg/l
Version : 13.03.2020
Limit value type (country of origin) : TRGS 903 (D)
Parameter : Butoxy acetic acid / Urine (U) / End of exposure or end of shift ; At long term exposure: after several previous shifts
Limit value : 150 mg/g Kr
Version : 13.03.2020

DNEL-/PNEC-values

DNEL/DMEL

PHOSPHORIC ACID ; CAS No. : 7664-38-2
Limit value type : DNEL worker (local)
Exposure route : Inhalation
Exposure frequency : Long-term
Limit value : 1 mg/m³
Limit value type : DNEL worker (local)
Exposure route : Inhalation
Exposure frequency : Short-term
Limit value : 2 mg/m³
2-BUTOXYETHANOL ; CAS No. : 111-76-2
Limit value type : DNEL worker (local)
Exposure route : Inhalation
Exposure frequency : Short-term
Limit value : 246 mg/m³
Limit value type : DNEL worker (systemic)
Exposure route : Inhalation
Exposure frequency : Long-term
Limit value : 98 mg/m³
Limit value type : DNEL worker (systemic)
Exposure route : Inhalation
Exposure frequency : Short-term
Limit value : 663 mg/m³
Limit value type : DNEL worker (systemic)
Exposure route : Dermal
Exposure frequency : Long-term
Limit value : 75 mg/kg
Limit value type : DNEL worker (systemic)
Exposure route : Dermal

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

Exposure frequency : Short-term
Limit value : 89 mg/kg

PNEC

2-BUTOXYETHANOL ; CAS No. : 111-76-2

Limit value type : PNEC (Aquatic, freshwater)
Limit value : 8,8 mg/l
Limit value type : PNEC (Aquatic, marine water)
Limit value : 0,88 mg/l
Limit value type : PNEC (Sediment, freshwater)
Limit value : 34,6 mg/kg
Limit value type : PNEC (Soil)
Limit value : 2,33 mg/kg
Limit value type : PNEC (Sewage treatment plant)
Limit value : 463 mg/l

8.2 Exposure controls

Personal protection equipment

Eye/face protection



Wear suitable safety goggles in case of splash.

Suitable eye protection
EN 166.

Skin protection

Hand protection



Suitable gloves type : EN 374.
Suitable material : NBR (Nitrile rubber)
Breakthrough time (maximum wearing time) : 480 min.
Thickness of the glove material : 0.4 mm

Remark : The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Respiratory protection



Respiratory protection necessary at: exceeding exposure limit values

Suitable respiratory protection apparatus
Combination filtering device (EN 14387)
Type : A

Remark

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

General information

Do not put any product-impregnated cleaning rags into your trouser pockets. When using do not eat, drink, smoke, sniff. Avoid contact with skin, eyes and clothes. P362+P364 - Take off contaminated clothing and wash it before reuse. P264 - Wash hands thoroughly after handling.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

8.3 Additional information

No tests have been performed. Selection made for preparations according to the best available knowledge and information on ingredients. In the case of preparations the resistance of glove materials cannot be calculated in advance so it has to be tested before use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid

Colour : yellow

Odour

characteristic

Safety characteristics

Initial boiling point and boiling range	(1013 hPa)	approx.	98	°C
:				
Flash point :				not relevant
Lower explosion limit :				not relevant
Upper explosion limit :				not relevant
Vapour pressure :	(50 °C)			not relevant
Density :	(20 °C)	approx.	1,13	g/cm ³
pH :	(20 °C / 100 g/l)	approx.	1,5	
Maximum VOC content (EC) :			2,2	Wt %
Maximum VOC content (Switzerland) :			2,2	Wt %
Corrosive to metals :	May be corrosive to metals.			

9.2 Other information

No further relevant information available. CH : This product is not under the liability for taxation of VOC acc. VOCV (< 3 % VOC).

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is considered to be non-reactive under normal use conditions.

10.2 Chemical stability

The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

Alkali (lye).

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

Zinc Steel

10.6 Hazardous decomposition products

No known hazardous decomposition products.
Decomposition products in case of fire: see section 5.

SECTION 11: Toxicological information

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

Acute toxicity

Acute oral toxicity

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
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Version (Revision) : 5.0.1 (5.0.0)

Parameter : ATEmix calculated
Exposure route : Oral
Effective dose : > 2000 mg/kg
Parameter : LD50 (PHOSPHORIC ACID ; CAS No. : 7664-38-2)
Exposure route : Oral
Species : Rat
Effective dose : 1530 mg/kg
Parameter : LD50 (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Exposure route : Oral
Species : Rat
Effective dose : 1250 - 1490 mg/kg
Method : OECD 401

Acute dermal toxicity

Parameter : ATEmix calculated
Exposure route : Dermal
Effective dose : > 2000 mg/kg
Parameter : LD50 (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Exposure route : Dermal
Species : Rabbit
Effective dose : 841 mg/kg
Method : OECD 402
Parameter : LD50 (PHOSPHORIC ACID ; CAS No. : 7664-38-2)
Exposure route : Dermal
Species : Rabbit
Effective dose : 2740 mg/kg

Acute inhalation toxicity

Parameter : ATEmix calculated
Exposure route : Inhalation
Effective dose : > 20 mg/l
Parameter : LC50 (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Exposure route : Inhalation
Species : Rat
Effective dose : 2 - 20 mg/l
Exposure time : 4 h

Corrosion

Skin corrosion/irritation

No further relevant information available.

Serious eye damage/eye irritation

No further relevant information available.

Respiratory or skin sensitisation

Skin sensitisation

No further relevant information available.

Sensitisation to the respiratory tract

No further relevant information available.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

No further relevant information available.

Germ cell mutagenicity

No further relevant information available.

Reproductive toxicity

No further relevant information available.

STOT-single exposure

No further relevant information available.

STOT-repeated exposure

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

No further relevant information available.

Aspiration hazard

No further relevant information available.

11.2 Information on other hazards

Toxicokinetics, metabolism and distribution

There are no data available on the preparation/mixture itself.

Other adverse effects

May be absorbed through the skin. Has degreasing effect on the skin. Frequently or prolonged contact with skin may cause dermal irritation.

Additional information

Preparation not tested. The statement is derived from the properties of the single components.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

Parameter : LC50 (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Species : Oncorhynchus mykiss (Rainbow trout)
Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : 1474 mg/l
Exposure time : 96 h
Method : OECD 203

Chronic (long-term) fish toxicity

Parameter : NOEC (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Species : Brachydanio rerio (zebra-fish)
Evaluation parameter : Chronic (long-term) fish toxicity
Effective dose : > 100 mg/l
Exposure time : 21 D
Method : OECD 204

Acute (short-term) toxicity to crustacea

Parameter : EC50 (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) toxicity to crustacea
Effective dose : 1550 mg/l
Exposure time : 48 h
Method : DIN 38412 / part 11

Chronic (long-term) toxicity to crustacea

Parameter : NOEC (PHOSPHORIC ACID ; CAS No. : 7664-38-2)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) toxicity to crustacea
Effective dose : 56 mg/l
Exposure time : 48 h
Method : OECD 202

Parameter : NOEC (PHOSPHORIC ACID ; CAS No. : 7664-38-2)
Species : Desmodesmus subspicatus
Evaluation parameter : Acute (short-term) toxicity to aquatic algae and cyanobacteria
Effective dose : 100 mg/l
Exposure time : 72 h
Method : OECD 201

Parameter : NOEC (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Chronic (long-term) toxicity to crustacea

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

Effective dose : 100 mg/l
Exposure time : 21 D
Method : OECD 211

Acute (short-term) toxicity to aquatic algae and cyanobacteria

Parameter : EC50 (PHOSPHORIC ACID ; CAS No. : 7664-38-2)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) toxicity to crustacea
Effective dose : > 100 mg/l
Exposure time : 48 h
Method : OECD 202
Parameter : EC50 (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Species : Pseudokirchneriella subcapitata
Evaluation parameter : Acute (short-term) toxicity to aquatic algae and cyanobacteria
Effective dose : 1840 mg/l
Exposure time : 72 h
Method : OECD 201
Parameter : EC50 (PHOSPHORIC ACID ; CAS No. : 7664-38-2)
Species : Desmodesmus subspicatus
Evaluation parameter : Acute (short-term) toxicity to aquatic algae and cyanobacteria
Effective dose : > 100 mg/l
Exposure time : 72 h
Method : OECD 201

Chronic (long-term) algae toxicity

Parameter : NOEC (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Species : Pseudokirchneriella subcapitata
Evaluation parameter : Chronic (long-term) algae toxicity
Effective dose : 286 mg/l
Exposure time : 72 h
Method : OECD 201

12.2 Persistence and degradability

According to the recipe, contains no AOX. The surfactant contained in this mixture complies with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents.

Biodegradation

Parameter : Biodegradation (2-BUTOXYETHANOL ; CAS No. : 111-76-2)
Inoculum : Biodegradation
Degradation rate : 88 %
Test duration : 20 D

12.3 Bioaccumulative potential

No indication of bioaccumulation potential.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

12.8 Additional ecotoxicological information

After neutralisation, reduction in toxic effects is observed.

SECTION 13: Disposal considerations

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

industry and process. List of proposed waste codes/waste designations in accordance with EWC

- 13.1 Waste treatment methods**
Directive 2008/98/EC (Waste Framework Directive)
Before intended use
Waste codes/waste designations according to EWC/AVV
07 06 01* - aqueous washing liquids and mother liquors
20 01 29* - detergents containing dangerous substances.

SECTION 14: Transport information

14.1 UN number
UN 1760

14.2 UN proper shipping name
Land transport (ADR/RID)
CORROSIVE LIQUID, N.O.S. (PHOSPHORIC ACID)
Sea transport (IMDG)
CORROSIVE LIQUID, N.O.S. (PHOSPHORIC ACID)
Air transport (ICAO-TI / IATA-DGR)
CORROSIVE LIQUID, N.O.S. (PHOSPHORIC ACID)

14.3 Transport hazard class(es)
Land transport (ADR/RID)
Class(es) : 8
Classification code : C9
Hazard identification number (Kemler No.) : 80
Tunnel restriction code : E
Special provisions : LQ 5 I · E 1
Hazard label(s) :



8

Sea transport (IMDG)
Class(es) : 8
EmS-No. : F-A / S-B
Special provisions : LQ 5 I · E 1
Hazard label(s) :



8

Air transport (ICAO-TI / IATA-DGR)
Class(es) : 8
Special provisions : E 1
Hazard label(s) :



8

14.4 Packing group
III

14.5 Environmental hazards
Land transport (ADR/RID) : No

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : Bio-Circle STAR US 1
Revision date : 25.02.2021
Print date : 10.09.2021

Version (Revision) : 5.0.1 (5.0.0)

Sea transport (IMDG) : No
Air transport (ICAO-TI / IATA-DGR) : No

14.6 Special precautions for user

None

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

No transport as bulk according to IBC Code.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation

Authorisations and/or restrictions on use

Restrictions on use

Use restriction according to REACH annex XVII, no. : 3

Restrictions of occupation

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

Other regulations (EU)

Labelling for contents according to regulation (EC) No. 648/2004

< 5 % anionic surfactants
< 5 % non-ionic surfactants

National regulations

Technische Anleitung Luft (TA-Luft)

Weight fraction (Number 5.2.5. I) : < 5 %

Water hazard class (WGK)

Classification according to AwSV - Class : 1 (Slightly hazardous to water)

15.2 Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1 Indication of changes

08. Occupational exposure limit values

16.2 Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (Europäisches Übereinkommen über die Beförderung gefährlicher Güter auf der Straße)
AOX: adsorbierbare organisch gebundene Halogene
AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen
CAS: Chemical Abstracts Service (Unterabteilung der American Chemical Society)
CLP: Verordnung (EG) Nr. 1272/2008 über die Einstufung, Kennzeichnung und Verpackung von Stoffen und Gemischen (Classification Labelling and Packaging)
EAK / AVV: europäischer Abfallartenkatalog / Abfallverzeichnis-Verordnung
ECHA: Europäische Chemikalienagentur (European Chemicals Agency)
EINECS: : Altstoffverzeichnis (European Inventory of Existing Commercial Chemical Substances)
GHS: Global harmonisiertes System zur Einstufung und Kennzeichnung von Chemikalien (Globally Harmonized System of Classification and Labelling of Chemicals)
IATA: Internationale Luftverkehrs-Vereinigung (International Air Transport Association)
ICAO: Internationale Zivilluftfahrtorganisation (International Civil Aviation Organization)
IMDG: Gefahrgutkennzeichnung für gefährliche Güter im Seeschiffverkehr (International Maritime Code for Dangerous Goods)
RID: Regelung zur internationalen Beförderung gefährlicher Güter im Schienenverkehr (Règlement concernant le transport international ferroviaire de marchandises dangereuses)

Safety Data Sheet

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Trade name : Bio-Circle STAR US 1
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TRGS: Technische Regel für den Umgang mit Gefahrstoffen
VbF: Verordnung über brennbare Flüssigkeiten
VOC: flüchtige organische Verbindung (volatile organic compound)
VwVwS: Verwaltungsvorschrift wassergefährdender Stoffe
WGK: Wassergefährdungsklasse

16.3 Key literature references and sources for data

DGUV: GESTIS-Stoffdatenbank
ECHA: Classification And Labelling Inventory
ECHA: Pre-registered Substances
ECHA: Registered Substances
EC_Safety Data Sheet of Suppliers
ESIS: European Chemical Substances Information System
GDL: Gefahrstoffdatenbank der Länder
UBA Rigoletto: Wassergefährdende Stoffe
Regulation (EC) No. 1907/2006 of the European Parliament and of the Council
Regulation (EC) No. 1272/2008 of the European Parliament and of the Council

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

No information available.

16.5 Relevant H- and EUH-phrases (Number and full text)

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

16.6 Training advice

None

16.7 Additional information

None

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.