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

MAKING GREEN WORK.

Trade name :	STAR 100		
Revision date :	11.09.2020	**Version (Revision) :**	4.1.0 (4.0.1)
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SECTION 1: Identification of the substance / mixture and of the company / undertaking

1.1 Product identifier
STAR 100

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 AG

Street : Aahusweg 16

Postal code/city : 6403 Küssnacht am Rigi

Telephone : 0041 41 878 1166

Telefax : 0041 41 878 1347

Information contact : service@bio-circle.ch

1.4 Emergency telephone number
+41 (0)442515151
Schweizerisches Toxikologisches Informationszentrum, 145

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [CLP]
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

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/....

2.3 Other hazards
None

SECTION 3: Composition / information on ingredients

3.2 Mixtures

Hazardous ingredients

2-(2-BUTOXYETHOXY)ETHANOL ; REACH No. : 01-2119475104-44-XXXX ; EC No. : 203-961-6; CAS No. : 112-34-5

Weight fraction : ≥ 1 - < 5 %

Classification 1272/2008 [CLP] : Eye Irrit. 2 ; H319
Substance with a common (EC) occupational exposure limit value.

2-AMINOETHANOL ; REACH No. : 01-2119486455-28-XXXX ; EC No. : 205-483-3; CAS No. : 141-43-5

Weight fraction : ≥ 1 - < 3 %

Classification 1272/2008 [CLP] : Skin Corr. 1B ; H314 Eye Dam. 1 ; H318 Acute Tox. 4 ; H302 Acute Tox. 4 ; H312 Acute Tox. 4 ; H332 STOT SE 3 ; H335 Aquatic Chronic 3 ; H412

Specific Conc. Limits : STOT SE 3 ; H335: C ≥ 5 %

Further ingredients

2,2`,2``-NITRILOTRIETHANOL ; REACH No. : 01-2119486482-31-XXXX ; EC No. : 203-049-8; CAS No. : 102-71-6

Weight fraction : ≥ 1 - < 5 %

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

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. Protect uninjured eye.

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 skin irritation. Causes serious eye 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

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

Keep/Store only in original container. Protect against Frost

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

2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5

Limit value type (country of origin) :	MAK (CH)
Limit value :	10 ppm / 67 mg/m^3
Remark :	8 h
Version :	
Limit value type (country of origin) :	MAK (CH)
Limit value :	15 ppm / 101,2 mg/m^3
Remark :	short term
Version :	
Limit value type (country of origin) :	STEL (ch)
Limit value :	15 ppm / 101,2 mg/m^3
Version :	
Limit value type (country of origin) :	TWA (ch)
Limit value :	10 ppm / 67 mg/m^3
Version :	
Limit value type (country of origin) :	STEL (EC)
Limit value :	15 ppm / 101,2 mg/m^3
Version :	20.06.2019

Limit value type (country of origin) : TWA (EC)
Limit value : 10 ppm / 67,5 mg/m^3
Version : 20.06.2019

2-AMINOETHANOL ; CAS No. : 141-43-5

Limit value type (country of origin) : MAK (CH)
Limit value : 2 ppm / 5 mg/m^3
Remark : 8 h
Version :

Limit value type (country of origin) : MAK (CH)
Limit value : 4 ppm / 10 mg/m^3
Remark : short term
Version :

Limit value type (country of origin) : STEL (EC)
Limit value : 3 ppm / 7,6 mg/m^3
Remark : Skin
Version : 20.06.2019

Limit value type (country of origin) : TWA (EC)
Limit value : 1 ppm / 2,5 mg/m^3
Remark : Skin
Version : 20.06.2019

2,2`,2``-NITRILOTRIETHANOL ; CAS No. : 102-71-6

Limit value type (country of origin) : STEL (CH)
Limit value : 10 mg/m^3
Remark : inhalable aerosol
Version :

Limit value type (country of origin) : TRGS 900 (CH)
Limit value : 5 mg/m^3
Remark : inhalable aerosol
Version :

Limit value type (country of origin) : TWA (CH)
Limit value : 5 mg/m^3
Version :

DNEL-/PNEC-values

DNEL/DMEL

Limit value type : DNEL worker (local) (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Exposure route : Inhalation
Exposure frequency : Long-term
Limit value : 67,5 mg/m^3

Limit value type : DNEL worker (local) (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Exposure route : Inhalation
Exposure frequency : Short-term
Limit value : 101,2 mg/m^3

Limit value type : DNEL worker (systemic) (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Exposure route : Inhalation
Exposure frequency : Long-term
Limit value : 67,5 mg/m^3

Limit value type : DNEL worker (systemic) (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Exposure route : Dermal
Exposure frequency : Long-term
Limit value : 20 mg/kg

Limit value type : DNEL worker (local) (2-AMINOETHANOL ; CAS No. : 141-43-5)
Exposure route : Inhalation
Exposure frequency : Long-term
Limit value : 3,3 mg/m^3

Limit value type :	DNEL worker (systemic) (2-AMINOETHANOL ; CAS No. : 141-43-5)
Exposure route :	Dermal
Exposure frequency :	Long-term
Limit value :	1 mg/kg

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

Wear protective gloves in case of longer lasting skin contact.

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

Usually no personal respirative protection necessary.

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.

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 : Liquid
Colour : colourless
Odour : characteristic

Appearance

Physical state : Liquid

Colour : colourless

Odour

characteristic

Safety characteristics

Initial boiling point and boiling range :	(1013 hPa)	approx.	100	°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.	1,01	g/cm^3
pH :		approx.	10,5	
Maximum VOC content (EC) :			0	Wt %
Maximum VOC content (Switzerland) :			5,5	Wt %

9.2 Other information

No further relevant information available.

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

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

No information available.

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 toxicological effects

Acute toxicity

Acute oral toxicity

Parameter :	LD50 (2-AMINOETHANOL ; CAS No. : 141-43-5)
Exposure route :	Oral
Species :	Rat
Effective dose :	1515 mg/kg
Method :	OECD 401
Parameter :	LD50 (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Exposure route :	Oral

Species : Mouse
Effective dose : 5530 mg/kg
Method : OECD 401

Acute dermal toxicity

Parameter : LD50 (2-AMINOETHANOL ; CAS No. : 141-43-5)
Exposure route : Dermal
Species : Rabbit
Effective dose : 2504 - 2881 mg/kg
Method : OECD 402

Parameter : LD50 (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Exposure route : Dermal
Species : Rabbit
Effective dose : 2764 mg/kg
Method : OECD 402

Acute inhalation toxicity

Parameter : LC50 (2-AMINOETHANOL ; CAS No. : 141-43-5)
Exposure route : Inhalation
Species : Rat
Effective dose : > 1,3 mg/l
Exposure time : 6 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

No further relevant information available.

Aspiration hazard

No further relevant information available.

11.2 Toxicokinetics, metabolism and distribution

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

11.3 Other adverse effects

Has degreasing effect on the skin. Causes skin irritation. Causes serious eye irritation.

11.4 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-AMINOETHANOL ; CAS No. : 141-43-5)
Species :	Cyprinus carpio (Common Carp)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	349 mg/l
Exposure time :	96 h
Parameter :	LC50 (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Species :	Lepomis macrochirus (Bluegill)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	1300 mg/l
Exposure time :	96 h
Method :	OECD 203
Parameter :	LC50 (2-AMINOETHANOL ; CAS No. : 141-43-5)
Species :	Fish
Evaluation parameter :	Chronic (long-term) fish toxicity
Effective dose :	> 100 mg/l
Exposure time :	14 D
Method :	OECD 204

Chronic (long-term) fish toxicity

Parameter :	NOEC (2-AMINOETHANOL ; CAS No. : 141-43-5)
Species :	Fish
Evaluation parameter :	Chronic (long-term) fish toxicity
Effective dose :	> 100 mg/l
Exposure time :	14 D
Method :	OECD 204

Acute (short-term) toxicity to crustacea

Parameter :	EC50 (2-AMINOETHANOL ; CAS No. : 141-43-5)
Species :	Daphnia magna (Big water flea)
Evaluation parameter :	Acute (short-term) daphnia toxicity
Effective dose :	65 mg/l
Exposure time :	48 h
Parameter :	EC50 (2-AMINOETHANOL ; CAS No. : 141-43-5)
Species :	Daphnia magna (Big water flea)
Evaluation parameter :	Chronic (long-term) daphnia toxicity
Effective dose :	2,5 mg/l
Exposure time :	21 D
Method :	OECD 211
Parameter :	EC50 (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Species :	Daphnia magna (Big water flea)
Evaluation parameter :	Acute (short-term) daphnia toxicity
Effective dose :	> 100 mg/l
Exposure time :	48 h
Method :	OECD 202

Chronic (long-term) toxicity to crustacea

Parameter :	NOEC (2-AMINOETHANOL ; CAS No. : 141-43-5)
Species :	Daphnia magna (Big water flea)
Evaluation parameter :	Chronic (long-term) daphnia toxicity
Effective dose :	0,85 mg/l
Exposure time :	21 D
Method :	OECD 211

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

Parameter :	EC50 (2-AMINOETHANOL ; CAS No. : 141-43-5)
Species :	Scenedesmus subspicatus

Evaluation parameter :	Acute (short-term) algae toxicity
Effective dose :	22 mg/l
Exposure time :	72 h
Parameter :	EC50 (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Species :	Scenedesmus subspicatus
Evaluation parameter :	Acute (short-term) algae toxicity
Effective dose :	> 100 mg/l
Exposure time :	48 h
Method :	OECD 201

Chronic (long-term) algae toxicity

Parameter :	NOEC (2-AMINOETHANOL ; CAS No. : 141-43-5)
Species :	Scenedesmus subspicatus
Evaluation parameter :	Acute (short-term) algae toxicity
Effective dose :	4 mg/l
Exposure time :	72 h

Toxicity to microorganisms

Parameter :	EC50 (2-AMINOETHANOL ; CAS No. : 141-43-5)
Species :	Pseudomonas putida
Evaluation parameter :	Bacteria toxicity
Effective dose :	110 mg/l
Exposure time :	17 h
Method :	DIN 38412 / part 8
Parameter :	EC10 (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Species :	Bacteria toxicity
Effective dose :	> 1995 mg/l
Exposure time :	30 min

12.2 Persistence and degradability

Biodegradation

Parameter :	Biodegradation (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Inoculum :	Biodegradation
Degradation rate :	90 - 100 %
Test duration :	14 D
Evaluation :	Readily biodegradable (according to OECD criteria).
Method :	OECD 301E
Parameter :	Biodegradation (2-(2-BUTOXYETHOXY)ETHANOL ; CAS No. : 112-34-5)
Inoculum :	Biodegradation
Degradation rate :	90 - 100 %
Test duration :	8 D
Evaluation :	Readily biodegradable (according to OECD criteria).
Method :	OECD 302B
Parameter :	CO2 formation (% of the theoretical value) (2-AMINOETHANOL ; CAS No. : 141-43-5)
Inoculum :	Biodegradation
Evaluation parameter :	Aerobic
Degradation rate :	> 80 %
Test duration :	31 D
Evaluation :	Readily biodegradable (according to OECD criteria).
Method :	OECD 301B

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

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6 Other adverse effects

No information available.

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

13.1 Waste treatment methods

Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product

20 01 29* - detergents containing dangerous substances.

Waste code packaging

15 01 02 - plastic packaging.

Waste treatment options

Appropriate disposal / Package

Contaminated packages must be completely emptied and can be re-used following proper cleaning. Handle contaminated packages in the same way as the substance itself.

13.2 Additional information

These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use.

SECTION 14: Transport information

14.1 UN number

No dangerous good in sense of these transport regulations.

14.2 UN proper shipping name

No dangerous good in sense of these transport regulations.

14.3 Transport hazard class(es)

No dangerous good in sense of these transport regulations.

14.4 Packing group

No dangerous good in sense of these transport regulations.

14.5 Environmental hazards

No dangerous good in sense of these transport regulations.

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, 55

Other regulations (EU)

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

< 5 % non-ionic surfactants

National regulations

Other regulations, restrictions and prohibition regulations

Switzerland

Chemicals Ordinance, ChemO (SR 813.11)
Chemical Risk Reduction Ordinance, ORRChem (SR 814.81)

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

03. Further ingredients · 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 Classifiaction 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)
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)

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

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.