SAFETY DATA SHEET

1. Identification

Product identifier: TEGO® Wet 580 Terra

Chemical name: Aqueous Rhamnolipid solution

Other means of identification

Recommended use: Industrial use

Recommended restrictions: None known.

Manufacturer/Importer/Distributor Information

Company Name	:	Evonik Operations GmbH Rellinghauser Str. 1-11 45128 Essen Germany
Telephone	:	+49 201 173 01
Fax	:	+49 201 173 3000
E-mail	:	productsafety-sp@evonik.com

Emergency telephone number:

24-Hour Health Emergency	:	+49 2365 49 2232 +49 2365 49 4423 (Fax)

2. Hazard(s) identification

Classification according to GHS

Health Hazards

Serious Eye Damage/Eye Irritation	Category 1

Environmental Hazards

Acute hazards to the aquatic environment	Category 3

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement: Causes serious eye damage.
Harmful to aquatic life.

Precautionary Statements

Prevention: Avoid release to the environment. Wear eye protection/face protection.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

Disposal: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards: No data available.

3. Composition/information on ingredients

Chemical name:
Aqueous Rhamnolipid solution

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Rhamnolipids	No data available.	2122153-41-5	30 - 60%
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.	55965-84-9	<10%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General information:	Remove contaminated or soaked clothing immediately and dispose of safely.
Inhalation:	fresh air supply, consult a doctor if feeling unwell.
Skin Contact:	In case of contact with skin wash off with soap and water. If skin irritation persists, call a physician.
Eye contact:	In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice
Ingestion:	Call for medical advice immediately; show the container or the label. Thoroughly clean the mouth with water
Personal Protection for First-aid Responders:	No data available.

Most important symptoms and effects, both acute and delayed

Symptoms:	Risk of serious damage to eyes.
Hazards:	No data available.

Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	foam, carbon dioxide, dry powder, water spray.
Unsuitable extinguishing media:	High volume water jet.
Special hazards arising from the substance or mixture:	In the event of fire the following can be released: - carbon dioxide, carbon monoxide Under certain conditions of combustion traces of other toxic substances cannot be excluded

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	No specific precautions.
Special protective equipment for fire-fighters:	Do not inhale explosion and/or combustion gases. Use self-contained breathing apparatus and wear protective suit

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment.

Accidental release measures:	No data available.
Methods and material for containment and cleaning up:	Take up with absorbent material (eg sand, kieselguhr, universal binder) Dispose of absorbed material in accordance with the regulations.
Environmental Precautions:	Do not allow to enter drains or waterways Prevent product from getting into subsoil/soil.

7. Handling and storage

Handling

Technical measures:	No data available.
Local/Total ventilation:	No data available.
Safe handling advice:	Contact with eyes and skin must be avoided Do not inhale gases/vapours/aerosols.Use personal protective equipment. Provide sufficient ventilation and exhaust at the workplace.
Contact avoidance measures:	No data available.

Storage

Safe storage conditions:	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Recommended storage temperature: 5 - 25 °C.
Safe packaging materials:	No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Observe national threshold limit values.

Biological Limit Values

Observe national threshold limit values.

Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

General information:	No data available.
Eye/face protection:	Safety glasses with side shields
Hand Protection:	Material: gloves made of nitril (NBR) Break-through time: > 480 min Glove thickness: 0,11 mm

Other:	suitable protective clothing
Respiratory Protection:	No data available.
Hygiene measures:	When using do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Remove soiled or soaked clothing immediately.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	yellowish to brownish
Odor:	Characteristic
Odor Threshold:	No data available.
Freezing point:	Not applicable
Boiling Point:	Not determined.
Flammability:	No data available.

Upper/lower limit on flammability or explosive limits

Explosive limit - upper:	Not applicable
Explosive limit - lower:	Not applicable
Flash Point:	> 100 °C/> 212 °F
Auto-ignition temperature:	No data available.
Decomposition Temperature:	Not expected during handling from practical experience.
pH:	5,6 - 9 100 % 22 °C/72 °F

Viscosity

Dynamic viscosity:	not measured
Kinematic viscosity:	No data available.
Flow Time:	No data available.

Solubility(ies)

Solubility in Water:	Soluble
Solubility (other):	Soluble
Partition coefficient (n-octanol/water):	No data available.
Vapor pressure:	No data available.
Relative density:	No data available.
Density:	1,11 g/ml
Bulk density:	No data available.
Relative vapor density:	Not determined.

Other information

Explosive properties:	Not to be expected in view of the structure
Oxidizing properties:	The substance or mixture is not classified as oxidizing.
Pyrophoric properties:	not to be expected, given the composition employed Not expected during handling from practical experience.
Formation of Flammable Gases:	Not expected during handling from practical experience.
Metal Corrosion:	Not corrosive to metals
Evaporation Rate:	No data available.
Surface tension	No data available.

10. Stability and reactivity

Reactivity:	see section "Possibility of hazardous reactions".
Chemical Stability:	The product is stable under normal conditions.
Possibility of hazardous reactions:	No hazardous reactions with proper storage and handling
Conditions to avoid:	Unknown
Incompatible Materials:	Avoid contact with strong oxidants.
Hazardous Decomposition Products:	None with proper storage and handling.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	If handled correctly, not a relevant route of exposure. Information on effects are given below.
Skin Contact:	Relevant route of exposure. Information on effects are given below.
Eye contact:	Relevant route of exposure. Information on effects are given below.
Ingestion:	If handled correctly, not a relevant route of exposure. Information on effects are given below.

Acute toxicity (list all possible routes of exposure)

Oral

Product:	Not classified for acute toxicity based on available data.
Components:	
Rhamnolipids	LD 50, Rat, > 5.000 mg/kg, OECD 423
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-	LD 50, Rat, Male, 64 mg/kg, OECD 401

methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	

Dermal

Product:	Not classified for acute toxicity based on available data.
Components:	
Rhamnolipids	Not toxic after single exposure, No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	LD 50, Rabbit, Male, 87,12 mg/kg, OECD 402

Inhalation

Product:	Not classified for acute toxicity based on available data.
Components:	
Rhamnolipids	Not toxic after single exposure, Vapour, No data available. Not toxic after single exposure, Dust and mist, No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	LC 50, Rat, Female, Male, 4 h, 0,33 mg/l, Dust and mist, OECD 403 Vapour, Not toxic after single exposure, Not applicable

Repeated dose toxicity

Product:	No data available.
Components:	
Rhamnolipids	NOEL, Rat, Oral, daily, > 1000 mg/kg
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Skin Corrosion/Irritation

Product:	No data available.
Components:	
Rhamnolipids	Not irritating, OECD 439, Human, reconstructed epidermis (RhE) model
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	Corrosive.

Serious Eye Damage/Eye Irritation

Product:	No data available.
Components:	

Rhamnolipids	Risk of serious damage to eyes., Bovine cornea Irritating., OECD 438, Chicken, Tested as 10 % solution Risk of serious damage to eyes., OECD 438, Chicken, Tested as 50 % solution
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	Risk of serious damage to eyes.

Respiratory or Skin Sensitization

Product:	No data available.
Components:	
Rhamnolipids	direct peptide binding assay, OECD 442 C, synthetic peptides, Not a skin sensitizer. KeratinoSens assay, OECD 442 D, Not a skin sensitizer.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	Strong skin sensitizer.

Carcinogenicity

Product:	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Germ Cell Mutagenicity
In vitro

Product:	No data available.
Components:	
Rhamnolipids	Bacterial reverse mutation assay, OECD 471: , negative Micronucleus test, OECD 487: , negative
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	Ames test, OECD 471: , negative

In vivo

Product:	No data available.

Components:

Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Reproductive toxicity

Product:	No data available.

Components:

Rhamnolipids	Oral
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Specific Target Organ Toxicity - Single Exposure

Product:	No data available.

Components:

Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.

Components:

Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Aspiration Hazard

Product:	Not classified

Components:

Rhamnolipids	No data available.

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	Not classified

Information on health hazards

Other hazards

Product: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Components:

Rhamnolipids	LC 50, Pimephales promelas, 96 h, 75 mg/l OECD 203, Own study
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Aquatic Invertebrates

Product: No data available.

Components:

Rhamnolipids	EC 50, Daphnia magna, 48 h, > 196 mg/l OECD 202
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Toxicity to Aquatic Plants

Product: No data available.

Components:

Rhamnolipids	ErC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 185 mg/l (OECD 201) Own study EC 10 (Algae (Pseudokirchneriella subcapitata), 72 h): > 185 mg/l (OECD 201) Own study
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-	No data available.

one [EC no.220-239-6] (3:1)

Toxicity to microorganisms

Product:	No data available.
Components:	
Rhamnolipids	EC 10, activated sludge, 3 h, 131 mg/l, OECD 209 EC 50, activated sludge, 3 h, > 1.000 mg/l, OECD 209
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Toxicity to soil dwelling organisms

Product:	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Toxicity to terrestrial organisms

Product:	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Aquatic Invertebrates

Product:	No data available.

Components:

Rhamnolipids	EC 10, Daphnia magna, 21 d, 34,27 mg/l, OECD 211
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Toxicity to microorganisms

Product:	No data available.
Components:	
Rhamnolipids	EC 10, activated sludge, 3 h, 131 mg/l, OECD 209 EC 50, activated sludge, 3 h, > 1.000 mg/l, OECD 209
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Toxicity to soil dwelling organisms

Product:	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Toxicity to terrestrial organisms

Product:	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-	No data available.

one [EC no.220-239-6]
(3:1)

Persistence and Degradability

Biodegradation

Product:	96 %, 14 d, OECD 301 F, The product is easily biodegradable. Values refer to the main component., aerobic 100 %, 28 d, OECD 301 F, The product is easily biodegradable. Values refer to the main component., aerobic 100 %, 42 d, OECD 311, The product is easily biodegradable. Values refer to the main component., anaerobic
Components:	
Rhamnolipids	96 %, 28 d, OECD 301 F, The product is easily biodegradable. 100 %, 42 d, OECD 311, The product is easily biodegradable.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	The product is easily biodegradable.

BOD/COD Ratio

Product:	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Partition Coefficient n-octanol / water (log Kow)

Product:	No data available.
Components:	
Rhamnolipids	-0,247, 22 °C, OECD 105, GLP

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Mobility in soil:

Product	No data available.
Components:	
Rhamnolipids	No data available.
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no.220-239-6] (3:1)	No data available.

Other adverse effects:

Other hazards

Product: Do not allow to enter soil, waterways or waste water canal.

13. Disposal considerations

Disposal methods: Must be brought to an adequate waste treatment facility, in conformity with applicable waste disposal regulations.

Contaminated Packaging: If empty contaminated containers are recycled or disposed of, the receiver must be informed about possible hazards.

14. Transport information

International Regulations

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

15. Regulatory information

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

16.Other information, including date of preparation or last revision

Issue Date: 04.03.2019

Version #: 1.5

Abbreviations and acronyms:

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further Information: No data available.

Revision Information: Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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