SAFETY DATA SHEET according to regulation 1907/2006

Product name: Nanoflex Infusion

Creation date: 18.02.2022, Revision: 18.02.2022, version: 1.0

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name

Nanoflex Infusion

Name: triethoxyisobutylsilane (CAS: 17980-47-1, EC: 402-810-3, Index: 014-007-00-1)

REACH Registration number: 01-0000015254-76

https://my.chemius.net/p/AEaSy4/en/pd/en

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

Relevant identified uses

Hydrophobing agent. Industrial use
[SU19] Building and construction work.
[SU22] Professional use.
[PROC10] Apply with roller or brush.
[PROC11] Manual spraying.
[PROC13] Treatment of products by immersion and pouring.
[ERC8c] Widespread use leading to inclusion into/onto article (indoor).
[ERC8f] Widespread use leading to inclusion into/onto article (outdoor).

Uses advised against

No information.

1.3 Details of the supplier of the safety data sheet

Supplier

Nano-Care Deutschland AG
Hauptstraße 122
66780 Rehlingen-Siersburg, Germany
+49 6838 97491 40
info@nano-care.de

1.4 Emergency Telephone Number

Emergency

112

Supplier

Poison centre in Berlin (Giftnotruf Berlin): +49 (0)30 30686 700

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 Causes skin irritation.

2.2 Label elements

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



Signal word: Warning

H315 Causes skin irritation.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

2.3 Other hazards

The substances in the mixture are not classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

NAME	CAS EC INDEX REACH	%	CLASSIFICATION ACCORDING TO REGULATION (EC) NO 1272/2008 (CLP)	SPECIFIC CONC. LIMITS	NOTES FOR SUBSTANCES
triethoxyisobutylsilane	17980-47-1 402-810-3 014-007-00-1 01-0000015254-76	90-100	Skin Irrit. 2; H315	/	/

3.2 Mixtures

For substances see 3.1.

SECTION 4: FIRST AID MEASURES

4.1 First aid measures

General notes

Remove contaminated clothing. When in doubt or if feeling unwell seek medical assistance. Show the safety data sheet and label to the physician.

Following inhalation

Remove patient to fresh air - move out of dangerous area. If symptoms develop and persist, seek medical attention.

Following skin contact

Take off all contaminated clothing. Wash affected skin areas thoroughly with plenty of water and soap. If symptoms develop and persist, seek medical attention.

Following eye contact

Immediately flush eyes with running water, keeping eyelids apart. If the patient is wearing contact lenses, remove them immediately. If irritation persists, seek professional medical attention.

Following ingestion

Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Drink plenty of water. Consult a physician. Show the physician the safety data sheet or label.

4.2 Most important symptoms and effects, both acute and delayed

Following inhalation
Excessive exposure to spray mist, fog, or vapours may cause respiratory irritation. Coughing, sneezing, nasal discharge, labored breathing.

Following skin contact
Irritating to the skin. Itching, redness, pain.

Following eye contact
Contact with eyes can cause irritation (redness, tearing, pain).

Following ingestion
May cause abdominal discomfort. May cause nausea/vomiting and diarrhea.

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
Carbon dioxide. Dry chemical powder. Water spray. Alcohol resistant foam.

Unsuitable extinguishing media
Full water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products
In case of a fire toxic gases can be generated; do not inhale gases/smoke. Burning produces noxious and toxic fumes.

5.3 Advice for firefighters

Protective actions
No action shall be taken involving any personal risk or without suitable training. In case of fire or heating do not breathe fumes/vapours.

Special protective equipment for fire-fighters
Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Additional information
Contaminated firefighting water and fire residues must be disposed of in accordance with the local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Protective equipment
Use personal protective equipment (Section 8).

Precautionary measures
Ensure adequate ventilation.

Emergency procedures
No action shall be taken involving any personal risk or without suitable training. Prevent access to unprotected personnel. Do not breathe vapour or mist. Avoid contact with skin, eyes and clothing.

For emergency responders

Use personal protective equipment.

6.2 Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. In case of release into the environment, inform the relevant authorities.

6.3 Methods and material for containment and cleaning up

For containment

Stem the spill if this does not pose risks.

For cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Collect in a suitable container and dispose in accordance with the methods under Section 13. Dispose of materials or solid residues at an authorized site. Prevent release into the sewer, water, basements or confined areas.

OTHER INFORMATION

See Section 7: safe handling.

6.4 Reference to other sections

See also sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures

Measures to prevent fire

Ensure adequate ventilation.

Measures to prevent aerosol and dust generation

Use general or local exhaust ventilation to prevent inhaling vapours and aerosols.

Measures to protect the environment

Do not discharge into drains, surface water and soil. After use immediately close container tightly.

Other measures

No information.

Advice on general occupational hygiene

Wear suitable protective equipment; see Section 8. Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Do not breathe vapours/mist. Avoid contact with skin, eyes and clothes. Remove contaminated clothes and wash them before reuse. Wash hands after use.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store in accordance with local regulations. Keep in cool and well ventilated area. Keep away from moisture. Keep away from food, drink and animal feeding stuffs.

Packaging materials

Store only in original container.

Requirements for storage rooms and vessels

Close opened containers after use. Put the containers upright to prevent from leaking. Do not store in unlabelled containers.

Storage class

No information.

Further information on storage conditions

No information.

7.3 Specific end use(s)

Recommendations

No information.

Industrial sector specific solutions

No information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

No information.

Information on monitoring procedures

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 482:2021 Workplace exposure. Procedures for the determination of the concentration of chemical agents. Basic performance requirements.

DNEL/DMEL values

For product

No information.

For components

No information.

PNEC values

For product

No information.

For components

No information.

8.2 Exposure controls

Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices – wash hands at breaks and when done working with material. Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapours/aerosols. Do not eat, drink or smoke while working. Avoid contact with skin, eyes and clothes.

Structural measures to prevent exposure

No information.

Organisational measures to prevent exposure

Remove all contaminated clothes immediately and wash them before reuse.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration. Keep away from food, drink and animal feeding stuffs.

Personal protective equipment

Eye and face protection

Safety glasses with side protection (EN 166).

Hand protection

Use chemical resistant gloves classified according to standard EN 374. The penetration time is determined by the protective glove manufacturer and must be observed. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately.

Appropriate materials

MATERIAL	THICKNESS	PENETRATION TIME	REMARK
chloroprene rubber	0.5 mm	> 480 min	Long term use: EN 374-6
fluoroelastomer (FKM)	0.4 mm	> 480 min	Long term use: EN 374-6

Skin protection

Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345). At higher exposures wear chemical-resistant clothing (EN 13034) and boots, natural rubber (EN 20345).

Respiratory protection

In case of insufficient ventilation wear suitable respiratory protection. In case of insufficient ventilation wear mask with filter ABEK (EN 14387). 'High/elevated concentrations' means that the occupational exposure limit values have been exceeded.

Thermal hazards

No information.

Environmental exposure controls

Substance/mixture related measures to prevent exposure

No information.

Instruction measures to prevent exposure

No information.

Organisational measures to prevent exposure

No information.

Technical measures to prevent exposure

Do not allow product to reach drains, sewage systems or ground water.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state

liquid

Colour

colourless

Odour

Hydrocarbon-like

Important health, safety and environmental information

Odour threshold	No information.
pH	No information.
Melting point/Freezing point	-72 °C (OECD 102)
Initial boiling point/boiling range	ca. 186 °C
Flash point	63 °C (Pensky-Martens)
Evaporation rate	No information.
Flammability (solid, gas)	No information.
Explosion limits (vol%)	0.39 – 8.47 vol % (DIN 51649)
Vapour pressure	0.33 hPa (OECD 104)
Vapour density	No information.
Density / weight	Relative density: ca.0.88 at 20 °C (DIN 51757)
Solubility	Water: Insoluble (Hydrolyses.)
Partition coefficient	No information.
Auto-ignition temperature	240 °C (DIN 51794)
Decomposition temperature	No information.
Viscosity	kinematic: 1.4 mm^2/s at 20 °C
Explosive properties	No information.
Oxidising properties	No information.

9.2 OTHER INFORMATION

No information.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3 Possibility of hazardous reactions

No dangerous reactions occur under normal conditions of storage and use.

10.4 Conditions to avoid

Moisture. Keep away from heat and sources of ignition. Heating. Water.

10.5 Incompatible materials

Water. Moisture.
Alcohols.

10.6 Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released. Hazardous combustion products, see Section 5 of the safety data sheet.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

(a) Acute toxicity

For components

NAME	EXPOSURE ROUTE	TYPE	SPECIES	TIME	VALUE	METHOD	REMARK
triethoxyisobutyl silane	oral	LD_{50}	rat	/	> 5000 mg/kg bw	OECD 402	/
triethoxyisobutyl silane	dermal	LD_{50}	rat	/	> 2000 mg/kg bw	OECD 402	/
triethoxyisobutyl silane	inhalation (dusts/mists)	LC_{50}	rat	4 h	> 5.88 mg/l	OECD 403	/

Additional information

The product is not classified for acute toxicity.

(b) Skin corrosion/irritation

For components

NAME	SPECIES	TIME	RESULT	METHOD	REMARK
triethoxyisobutylsilane	/	/	Irritating.	OECD 404	/

Additional information

Causes skin irritation.

(c) Serious eye damage/irritation

No information.

Additional information

The product is not classified as an irritant to the eyes.

(d) Respiratory or skin sensitisation

No information.

Additional information

The product is not classified as sensitising.

(e) (Germ cell) mutagenicity

For components

NAME	TYPE	SPECIES	TIME	RESULT	METHOD	REMARK
triethoxyisobutylsilane	in-vitro mutagenicity	/	/	Negative.	Ames test, OECD 471	/
triethoxyisobutylsilane	in-vitro mutagenicity	Chinese hamster lung fibroblasts.	/	Negative without metabolic activation	Equivalent to OECD 473	/
triethoxyisobutylsilane	in-vitro mutagenicity	Chinese hamster lung fibroblasts.	/	Negative with metabolic activation, negative without metabolic activation.	Equivalent to OECD 476	/

(f) Carcinogenicity

No information.

(g) Reproductive toxicity

No information.

Summary of evaluation of the CMR properties

The product is not classified as carcinogenic, mutagenic or toxic for reproduction.

(h) STOT-single exposure

For components

NAME	EXPOSURE ROUTE	TYPE	SPECIES	TIME	EXPOSURE	ORGAN	VALUE	RESULT	METHOD	REMARK
triethoxyisobutylsilane	oral	NOAEL	rat	/	/	/	1000 mg/kg bw	/	OECD 407	/
triethoxyisobutylsilane	inhalation (vapours)	NOAEL	rat	/	/	/	≥ 2.54 mg/L	/	OECD 413	/

Additional information

STOT SE (single exposure): Not classified.

(i) STOT-repeated exposure

For components

NAME	EXPOSURE ROUTE	TYPE	SPECIES	TIME	EXPOSURE	ORGAN	VALUE	RESULT	METHOD	REMARK
triethoxyisobutylsilane	oral	NOAEL	rat (female)	28 days	sub-acute	/	> 1000 mg/kg bw	/	OECD 407	/

Additional information

STOT RE (repeated exposure): Not classified.

(j) Aspiration hazard

No information.

Additional information

Aspiration hazard: Not classified.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Acute (short-term) toxicity

For components

NAME	TYPE	VALUE	EXPOSURE TIME	SPECIES	ORGANISM	METHOD	REMARK
triethoxyisobutylsilane	LC_{50}	85 mg/L	96 h	fish	*Oncorhynchus mykiss*	OECD 203	/

triethoxyisobutylsilane	EC_{50}	> 49.1 mg/L	48 h	crustacea	*Daphnia magna*	OECD 202	/
triethoxyisobutylsilane	NOEC	≥ 36 mg/L	72 h	algae	*Desmodesmus subspicatus*	OECD 201	/

Chronic (long-term) toxicity

For components

NAME	TYPE	VALUE	EXPOSURE TIME	SPECIES	ORGANISM	METHOD	REMARK
triethoxyisobutylsilane	EC50	> 100 mg/kg	17 days	Terrestrial plants	Trifolium ornithopodioides	OECD 208	/
triethoxyisobutylsilane	EC50	> 100 mg/kg	17 days	Terrestrial plants	*Lepidium sativum*	OECD 208	/
triethoxyisobutylsilane	EC50	> 100 mg/kg	17 days	Terrestrial plants	*Triticum aestivum*	OECD 208	/
triethoxyisobutylsilane	EC50	> 1000 mg/kg	14 days	earthworms	*Eisenia fetida*	OECD 207	/

12.2 Persistence and degradability

Abiotic degradation, physical- and photo-chemical elimination

No information.

Biodegradation

For components

NAME	TYPE	RATE	TIME	EVALUATION	METHOD	REMARK
triethoxyisobutylsilane	biodegradability	75 %	28 days	readily biodegradable	OECD 301 D	/

12.3 Bioaccumulative potential

Partition coefficient

For components

NAME	MEDIA	VALUE	TEMPERATURE °C	PH	CONCENTRATION	METHOD
triethoxyisobutylsilane	Octanol-water (log Pow)	3.6	/	/	/	QSAR
triethoxyisobutylsilane	Log Pow	> 2.03	/	/	/	Literature data

Bioconcentration factor (BCF)

No information.

12.4 Mobility in soil

Known or predicted distribution to environmental compartments

No information.

Surface tension

No information.

Adsorption/Desorption

No information.

12.5 Results of PBT and vPvB assessment

No evaluation.

12.6 Other adverse effects

No information.

12.7 Additional information

For product

Product is not classified as dangerous for environment. Do not allow to reach ground water, water courses or sewage system.

For components

triethoxyisobutylsilane

This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product / Packaging disposal

Waste chemical

Dispose of in accordance with applicable waste disposal regulation. Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste. Do not allow product to reach drains/sewage systems.

Waste codes / waste designations according to LoW

No information.

Packaging

Dispose of in accordance with applicable waste disposal regulation. Deliver completely emptied containers to approved waste disposal authorities. Uncleaned containers are classified as hazardous waste - they should be handled in the same manner as the contents.

Waste codes / waste designations according to LoW

No information.

Waste treatment-relevant information

No information.

Sewage disposal-relevant information

No information.

Other disposal recommendations

No information.

SECTION 14: TRANSPORT INFORMATION

ADR/RID	IMDG	IATA	ADN
14.1 UN number			
Not dangerous according to transport regulations.	Not dangerous according to transport regulations.	Not dangerous according to transport regulations.	Not dangerous according to transport regulations.
14.2 UN proper shipping name			
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable
14.3 Transport hazard class(es)			
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable
14.4 Packing group			
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable
14.5 Environmental hazards			
NO	NO	NO	NO

14.6 Special precautions for user			
Limited quantities Not given/not applicable	Limited quantities Not given/not applicable		Limited quantities Not given/not applicable
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code			
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable

SECTION 15: REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2015/830)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)
not applicable

Regulation EC 648/2004 on detergents
No information.

Special instructions
Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Terms of restriction: 3.

15.2 Chemical Safety Assessment

The chemical safety assessment has been made.

SECTION 16: OTHER INFORMATION

Indication of changes
No information.

Key literature references and sources for data
No information.

Abbreviations and acronyms
ATE - Acute Toxicity Estimate
ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CEN - European Committee for Standardisation
C&L - Classification and Labelling
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CAS# - Chemical Abstracts Service number
CMR - Carcinogen, Mutagen, or Reproductive Toxicant
CSA - Chemical Safety Assessment
CSR - Chemical Safety Report
DMEL - Derived Minimal Effect Level
DNEL - Derived No Effect Level
DPD - Dangerous Preparations Directive 1999/45/EC
DSD - Dangerous Substances Directive 67/548/EEC
DU - Downstream User
EC - European Community
ECHA - European Chemicals Agency
EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC - European Economic Community

EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
EN - European Standard
EQS - Environmental Quality Standard
EU - European Union
Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry
JRC - Joint Research Centre
Kow - octanol-water partition coefficient
LC50 - Lethal Concentration to 50 % of a test population
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (see http://ec.europa.eu/environment/waste/framework/list.htm)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment
(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet
SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

List of relevant H phrases

H315 Causes skin irritation.