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

1.1 Product identifier

Lysis Solution
Article number: 4DL-07030 und 4DL-07031-1L

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

1.2.1 Relevant uses

Lysis of human, animal and plant cells

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

4D Lifetec AG
Gewerbestrasse 8
6330 Cham / SWITZERLAND
Phone +41 32 508 08 07
Homepage 4dlifetec.com
E-mail info@4dlifetec.com

Address enquiries to

Technical information info@4dlifetec.com

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Company +41 41 747 25 52, Mo - Fr 8:00 - 16:00

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Acute Tox. 4: H332 Harmful if inhaled.
Eye Irrit. 2: H319 Causes serious eye irritation.

2.2 Label elements

Hazard pictograms

Signal word WARNING

Contains: Disodium dihydrogene ethylene diamintetraacetate-dihydrate

Sodium N-Lauroyl Sarcosinate

Hazard statements
H332 Harmful if inhaled.
H319 Causes serious eye irritation.

Precautionary statements
P260 Do not breathe mist / vapours / spray.
P312 Call a POISON CENTER / doctor if you feel unwell.
P337+P313 If eye irritation persists: Get medical advice / attention.

2.3 Other hazards

Environmental hazards Does not contain any PBT or vPvB substances.

Other hazards Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
1 - 5	Disodium dihydrogene ethylene diamintetraacetate-dihydrate
	CAS: 6381-92-6, EINECS/ELINCS: 205-358-3
	GHS/CLP: Acute Tox. 4: H332 - STOT RE 2: H373
<= 1	Sodium N-Lauroyl Sarcosinate
	CAS: 137-16-6, EINECS/ELINCS: 205-281-5
	GHS/CLP: Acute Tox. 2: H330 - Eye Dam. 1: H318 - Skin Irrit. 2: H315
<= 1	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated
	CAS: 9002-93-1, EINECS/ELINCS: Polymer
	GHS/CLP: Acute Tox. 4: H302 - Eye Dam. 1: H318 - Aquatic Chronic 2: H411

Comment on component parts SVHC (Candidate List of Substances of Very High Concern for authorisation) ≥ 0.1%
CAS 9002-93-1 - 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated
For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Take off contaminated clothing and wash before reuse.

Inhalation Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

Skin contact When in contact with the skin, clean with soap and water.
Consult a doctor if skin irritation persists.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion Seek medical advice immediately.
Induce the patient to vomit of his own accord only if fully conscious.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Product itself is non-combustible. Fire extinguishing method of surrounding areas must be considered.

Extinguishing media that must not be used Full water jet

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective clothing.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

The normal safety precautions for handling chemicals must be observed.

After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.
Do not eat, drink, smoke or take drugs at work.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.

Do not store together with food and animal food/diet.

Keep container tightly closed.
Protect from heat/overheating.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

not applicable

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
Eye protection	Safety glasses. (EN 166:2001)
Hand protection	0,4mm Nitrile rubber, >120 min (EN 374-1/-2/-3). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Protective clothing.
Other	Avoid contact with eyes and skin. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Respiratory protection	Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, combination filter A-P2. (DIN EN 14387)
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	colourless
Odor	characteristic
Odour threshold	not applicable
pH-value	10
pH-value [1%]	not determined
Boiling point [°C]	not determined
Flash point [°C]	not applicable
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	not determined
Bulk density [kg/m³]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	not applicable
Relative vapour density determined in air	not applicable
Evaporation speed	not applicable
Melting point [°C]	not determined
Autoignition temperature [°C]	not self-igniting
Decomposition temperature [°C]	not determined

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known.

10.4 Conditions to avoid

No dangerous reactions known if used as directed.

10.5 Incompatible materials

not determined

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product
ATE-mix, inhalativ (mist), > 4 - < 5 mg/l 4h.
ATE-mix, dermal, > 2000 mg/kg.
ATE-mix, oral, > 2000 mg/kg.

Substance
Disodium dihydrogene ethylene diamintetraacetate-dihydrate, CAS: 6381-92-6
LD50, oral, Rat: > 2000 mg/kg.
Sodium N-Lauroyl Sarcosinate, CAS: 137-16-6
LD50, oral, Rat: > 5000 mg/kg.
LC50, inhalativ (dust), Rat: 0,05 - 0,5 mg/l 4h.

Serious eye damage/irritation
Irritant
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Calculation method

Skin corrosion/irritation
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Respiratory or skin sensitisation
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Specific target organ toxicity — single exposure
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Specific target organ toxicity — repeated exposure
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Mutagenicity
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Reproduction toxicity
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Carcinogenicity
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Aspiration hazard
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.

General remarks

none

SECTION 12: Ecological information

12.1 Toxicity

Substance
Disodium dihydrogene ethylene diamintetraacetate-dihydrate, CAS: 6381-92-6
LC50, (96h), Leuciscus idus: > 500 mg/L.
EC50, (72h), Algae: 10 - 100 mg/L.
EC50, (24h), Daphnia magna: > 100 mg/L.
Sodium N-Lauroyl Sarcosinate, CAS: 137-16-6
EC50, (72h), Desmodesmus subspicatus: 79 mg/l.
EC50, (96h), Danio rerio: 107 mg/l.

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not determined

12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

	Dispose of as hazardous waste.
Waste no. (recommended)	180106*

Contaminated packaging

	Uncontaminated packaging may be taken for recycling.
Waste no. (recommended)	150110*

SECTION 14: Transport information

14.1 UN number

Transport by land according to ADR/RID	not applicable
Inland navigation (ADN)	not applicable
Marine transport in accordance with IMDG	not applicable
Air transport in accordance with IATA	not applicable

14.2 UN proper shipping name

Transport by land according to ADR/RID	NO DANGEROUS GOODS
Inland navigation (ADN)	NO DANGEROUS GOODS
Marine transport in accordance with IMDG	NOT CLASSIFIED AS "DANGEROUS GOODS"
Air transport in accordance with IATA	NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	not applicable
Inland navigation (ADN)	not applicable
Marine transport in accordance with IMDG	not applicable
Air transport in accordance with IATA	not applicable

14.4 Packing group

Transport by land according to ADR/RID	not applicable
Inland navigation (ADN)	not applicable
Marine transport in accordance with IMDG	not applicable
Air transport in accordance with IATA	not applicable

14.5 Environmental hazards

Transport by land according to ADR/RID	no
Inland navigation (ADN)	no
Marine transport in accordance with IMDG	no
Air transport in accordance with IATA	no

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

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

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2008/47/EC); (EU) 2015/830; (EU) 2016/131; (EU) 517/2014
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2017); IMDG-Code (2017, 38. Amdt.); IATA-DGR (2017).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (2010/75/CE)	0 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 03)

H315 Causes skin irritation.
H330 Fatal if inhaled.
H411 Toxic to aquatic life with long lasting effects.
H318 Causes serious eye damage.
H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.
H332 Harmful if inhaled.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ATE = acute toxicity estimate
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
STP = Sewage Treatment Plant
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.3 Other information

Classification procedure

Acute Tox. 4: H332 Harmful if inhaled. (Calculation method)
Eye Irrit. 2: H319 Causes serious eye irritation. (Calculation method)

Modified position

none