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

1.1 Product identifier

Nordlub Kühlerschutz K12 E-P

Nordlub Kühlerschutz K12 E-G

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

1.2.1 Relevant uses

Heat Transfer Fluid

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

NORDLUB Deutschland GmbH
Lange Str. 49
21614 Buxtehude / GERMANY
Phone +49 (0)4161 / 55 905 - 0
Fax +49 (0)4161 / 55 905 -29
Homepage www.nordlub.de
E-mail info@nordlub.de

Address enquiries to

Technical information info@nordlub.de

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Advisory body +49 (0)89-19240 (24h) (English)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture [REGULATION (GB) CLP]

Acute Tox. 4: H302 Harmful if swallowed.
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

The product is required to be labelled in accordance with regulation CLP.

Hazard pictograms

Signal word WARNING

Contains: Ethylene glycol

Hazard statements
H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P260 Do not breathe vapours / spray.
P264 Wash hands thoroughly after handling.
P270 Do no eat, drink or smoke when using this product.
P301+P312 IF SWALLOWED: Call a POISON CENTER / doctor if you feel unwell.
P501 Dispose of contents/container in accordance with local/national regulation.

2.3 Other hazards

Environmental hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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

SECTION 3: Composition / Information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
85 - 95	Ethylene glycol
	CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1
	GHS/CLP: Acute Tox. 4: H302 - STOT RE 2: H373

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
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.
Remove affected person from danger area, lay down.
In the event of symptoms seek medical treatment.
If unconscious, place in recovery position and get medical attention immediately.

Inhalation
Ensure supply of fresh air.
Remove the victim into fresh air and keep him calm.
In the event of symptoms seek medical treatment.
If breathing is irregular or stopped, administer artificial respiration.
Consult a doctor immediately.

Skin contact
In case of contact with skin wash off immediately 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
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.
IF you feel unwell: Immediately call a POISON CENTER.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects
Nausea, vomiting.
Tiredness
Unconsciousness
Cough
Headache

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
Alcohol-resistant foam.
Dry powder.
Carbon dioxide.
Water mist.
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

In the event of fire the following can be released:
Carbon monoxide (CO)
Carbon dioxide (CO2)
Smoke

5.3 Advice for firefighters

Do not inhale explosion and/or combustion gases.
Use self-contained breathing apparatus.

Cool containers at risk with water spray jet.
Collect contaminated firefighting water separately, must not be discharged into the drains.
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

Ensure adequate ventilation.
Wear suitable protective equipment. For personal protection see SECTION 8.
Use breathing apparatus if exposed to vapours/aerosol.
High risk of slipping due to leakage/spillage of product.
Keep away from all sources of ignition.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.
Prevent spread over a wide area (e.g. by containment or oil barriers).
In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, universal absorbent, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations (Section 13).

6.4 Reference to other sections

See SECTION 8

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.
Provide suitable vacuuming at the processing area.
Avoid contact with eyes and skin. Use personal protective equipment.
Place the container in an upright position and protect it against falling over.
Open and handle container with care.

The product is combustible.
Keep away from open flames, hot surfaces and sources of ignition.
Do not smoke.
Take precautionary measures against static discharges.

Do not eat, drink or smoke when using this product.
Take off contaminated clothing and wash before reuse.
Use barrier skin cream.
Wash hands before breaks and after work.
Cloths contaminated with product should not be kept in trouser pockets.

7.2 Conditions for safe storage, including any incompatibilities

Only use containers that are approved specifically for the substance/product.

Do not store together with food and animal food/diet.
Do not store together with oxidizing agents.
Do not store together with acids.

Keep container tightly closed.
Keep container in a well-ventilated place.
Protect from heat/overheating and from sun.
Keep in a cool place. Store in a dry place.

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)

Substance
Ethylene glycol
CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1
Long-term exposure: 20 ppm, 52 mg/m³, Vapour, particulate: 10 mg/m³
Short-term exposure (15-minute): 40 ppm, 104 mg/m³

Ingredients with occupational exposure limits to be monitored (EU)

Substance / EC LIMIT VALUES
Ethylene glycol
CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1
Eight hours: 20 ppm, 52 mg/m³, H
Short-term (15-minute): 40 ppm, 104 mg/m³

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)
Face shield. (EN 166)

Hand protection
The details concerned are recommendations. Please contact the glove supplier for further information.
0,4 mm, Nitrile rubber, >480 min (EN 374-1/-2/-3).
0,4 mm, Polychloroprene, >480 min (EN 374-1/-2/-3).

Skin protection
Protective clothing (EN 340)

Other
Do not breathe vapour/spray.
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
In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection.
Short term: filter apparatus, filter A. (DIN EN 14387)

Thermal hazards
not applicable

Delimitation and monitoring of the environmental exposition
Comply with applicable environmental regulations limiting discharge to air, water and soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	pink yellow clear
Odor	No information available.
Odour threshold	No information available.
pH-value	7,0 - 9,0
pH-value [1%]	No information available.
Boiling point [°C]	160
Flash point [°C]	> 120
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidising properties	none
Vapour pressure/gas pressure [kPa]	0,02 (20°C)
Density [g/cm³]	1,12 - 1,16 (20°C)
Relative density	No information available.
Bulk density [kg/m³]	not applicable
Solubility in water	miscible
Solubility other solvents	No information available.
Partition coefficient [n-octanol/water]	< 2
Kinematic viscosity	3-6 mm²/s (40°C)
Relative vapour density	No information available.
Evaporation speed	No information available.
Melting point [°C]	< -15
Auto-ignition temperature	No information available.
Decomposition temperature [°C]	No information available.
Particle characteristics	not applicable

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

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents.
Reactions with strong acids and alkalies.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from frost.

10.5 Incompatible materials

See SECTION 10.3.

10.6 Hazardous decomposition products

No dangerous reactions known if used as directed.
In the event of fire: See SECTION 5.

SECTION 11: Toxicological information

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

Acute oral toxicity Based on the available information, the classification criteria are fulfilled.

Substance
Ethylene glycol, CAS: 107-21-1
oral, Human, ca. 100 ml (minimum lethal dose_GESTIS)
LD50, oral, Rat, 5840 mg/kg (Lit.)

Acute dermal toxicity

Product
Based on the available information, the classification criteria are not fulfilled.

Substance
Ethylene glycol, CAS: 107-21-1
LD50, dermal, Rat, 9530 mg/kg (Lit.)

Acute inhalational toxicity

Product
Based on the available information, the classification criteria are not fulfilled.

Substance
Ethylene glycol, CAS: 107-21-1
LC50, inhalative, Rat, 2,5 g/l/6h (Lit.)

Serious eye damage/irritation Based on the available information, the classification criteria are not fulfilled.

Substance
Ethylene glycol, CAS: 107-21-1
no adverse effect observed

Skin corrosion/irritation Based on the available information, the classification criteria are not fulfilled.

Substance
Ethylene glycol, CAS: 107-21-1
Guinea pig, no adverse effect observed

Respiratory or skin sensitisation Based on the available information, the classification criteria are not fulfilled.

Substance
Ethylene glycol, CAS: 107-21-1
dermal, no adverse effect observed

Specific target organ toxicity — single exposure Based on the available information, the classification criteria are not fulfilled.

Specific target organ toxicity — repeated exposure Ingredients:
CAS 107-21-1: May cause damage to organs through prolonged or repeated exposure (oral, kidney).
Product:
May cause damage to organs through prolonged or repeated exposure.
Calculation method

Mutagenicity Based on the available information, the classification criteria are not fulfilled.

Substance

Ethylene glycol, CAS: 107-21-1
in vitro, negativ

Reproduction toxicity Based on the available information, the classification criteria are not fulfilled.

Carcinogenicity Based on the available information, the classification criteria are not fulfilled.

Aspiration hazard Based on the available information, the classification criteria are not fulfilled.

General remarks

Toxicological data of complete product are not available.
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

11.2 Information on other hazards

Endocrine disrupting properties No information available.

Other information

SECTION 12: Ecological information

12.1 Toxicity

Substance
Ethylene glycol, CAS: 107-21-1
LC50, (96h), fish, 18000 - 46000 mg/l (Lit.)
EC50, (96h), Daphnia magna, > 100 mg/l (Lit.)
IC50, (72h), Algae, > 100 mg/l (Lit.)
NOEC, (72d), Ceriodaphnia dubia, 8590 mg/l (Lit.)
NOEC, (72d), Oncorhynchus mykiss, 15380 mg/l (Lit.)

12.2 Persistence and degradability

Behaviour in environment compartments No information available.

Behaviour in sewage plant No information available.

Biological degradability CAS 107-21-1: > 90%, 10d (OECD 301 A)

12.3 Bioaccumulative potential

CAS 107-21-1: Log Pow = -1,36

12.4 Mobility in soil

Due to the chemical and physical properties the product is mobile in soil in general. May impurify the groundwater.

12.5 Results of PBT and vPvB assessment

not applicable

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

Ecological data of complete product are not available.
The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.
Do not discharge product unmonitored into the environment or into the drainage.

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 contents/container in accordance with local/national regulation.
Coordinate disposal with the disposal contractor/authorities if necessary.

Waste no. (recommended) 160114*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended) 150110* packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID 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 Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	2008/98/EC 2000/532/EC); 2010/75/EU; 2004/42/EC; (EC) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EEC ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014
TRANSPORT-REGULATIONS	ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2022)
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP.
- Observe employment restrictions for people	Observe employment restrictions for young people. Observe employment restrictions for mothers-to-be and nursing mothers.
- VOC (2010/75/CE)	No information available.

15.2 Chemical safety assessment

Assessment is available from the manufacturer. For more information on the measures of risk management can contact the manufacturer.

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H373 May cause damage to organs (Kidney) through prolonged or repeated exposure.
H302 Harmful if swallowed.

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
EL50 = Median effective loading
ELINCS = European List of Notified Chemical Substances
EmS = Emergency Schedules
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
IVIS = In vitro irritation score
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
LL50 = Median lethal loading
LQ = Limited Quantities
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: H302 Harmful if swallowed. (Calculation method)
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure. ()

Modified position

none