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

1.1 Product identifier

novoDYN® liquid

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

1.2.1 Relevant uses

Biogas plants additive
Waste treatment

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Kanadevia Inova Schmack GmbH
Bayernwerk 8
92421 Schwandorf / GERMANY
Phone +49 9431 751-277
Fax +49 (0)9431-751-204
Homepage www.kanadevia-inova.com/schmack-biogas
E-mail info@kanadevia-inova.com

Address enquiries to

Technical information info@kanadevia-inova.com

Safety Data Sheet sdb@chemiebuero.de (No dispatch of safety data sheets)

Safety data sheets are available from the supplier.

1.4 Emergency telephone number

Company +49 (0)9431-751-0

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture [REGULATION (EC) No 1272/2008]

Acute Tox. 4: H302 Harmful if swallowed.
Acute Tox. 4: H332 Harmful if inhaled.
Skin Sens. 1: H317 May cause an allergic skin reaction.
Eye Irrit. 2: H319 Causes serious eye irritation.
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

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

Hazard pictograms

Signal word WARNING

Contains: Cobalt disodium ethylenediaminetetraacetate

Sodium selenite

Hazard statements

H332 Harmful if inhaled.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.
H302 Harmful if swallowed.

Precautionary statements

P261 Avoid breathing mist/vapours/spray.
P264 Wash thoroughly after handling with plenty of water and soap.
P273 Avoid release to the environment.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P302+P352 IF ON SKIN: Wash with plenty of water / soap.
P333+P313 If skin irritation or rash occurs: 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.
P501 Dispose of contents/container in accordance with local/national regulation.

Special labelling EUH031 Contact with acids liberates toxic gas.

2.3 Other hazards

Human health dangers	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
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
15 - < 20	Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate
	CAS: 25481-21-4, EINECS/ELINCS: 247-019-2, Reg-No.: 01-2120762181-61-XXXX
5 - < 10	Cobalt disodium ethylenediaminetetraacetate
	CAS: 15137-09-4, EINECS/ELINCS: 239-198-0, Reg-No.: 01-2120778183-49-XXXX
	GHS/CLP: Skin Sens. 1: H317 - Acute Tox. 4: H302
1 - < 3	Sodium selenite
	CAS: 10102-18-8, EINECS/ELINCS: 233-267-9, EU-INDEX: 034-002-00-8, Reg-No.: 01-2119985427-23-XXXX
	GHS/CLP: Acute Tox. 2: H300 - Acute Tox. 2: H330 - Eye Irrit. 2: H319 - Skin Irrit. 2: H315 - Skin Sens. 1: H317 - Aquatic Acute 1: H400 - Aquatic Chronic 2: H411

Comment on component parts For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Change soaked clothing immediately.

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.
If skin irritation or rash occurs: Get medical advice/attention.

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 Rinse out mouth and give plenty of water to drink.
Consult a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to your doctor.

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

Ensure adequate ventilation.
Use personal protective equipment (protective gloves, safety glasses, protective clothing).
Only trained personnel inserting.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. general-purpose binder).
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

Use only in well-ventilated areas.
Avoid contact with eyes and skin. Use personal protective equipment.
Read label for instructions in use of product.

Wash face and/or hands before break and end of work.
Use barrier skin cream.
Do not eat, drink or smoke when using this product.
Remove soiled or soaked clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

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

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

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 EU (2004/37/EG)

Substance / EC LIMIT VALUES
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate
CAS: 25481-21-4, EINECS/ELINCS: 247-019-2, Reg-No.: 01-2120762181-61-XXXX
Eight hours: 0,05 (E) mg/m³

DNEL

Substance
Cobalt disodium ethylenediaminetetraacetate, CAS: 15137-09-4
Industrial, inhalative, Long-term - systemic effects, 0,349 mg/m³
Industrial, dermal, Long-term - systemic effects, 1 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 0,087 mg/m³
general population, dermal, Long-term - systemic effects, 0,5 mg/kg bw/day
general population, oral, Long-term - systemic effects, 0,025 mg/kg bw/day
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
Industrial, inhalative (dust), Long-term - systemic effects, 8,22 mg/m³
Industrial, dermal, Long-term - systemic effects, 2,33 mg/kg bw/day
general population, inhalative (dust), Long-term - systemic effects, 1,45 mg/m³
general population, dermal, Long-term - systemic effects, 0,833 mg/kg bw/day
general population, oral, Long-term - systemic effects, 0,833 mg/kg bw/day
Sodium selenite, CAS: 10102-18-8
Industrial, inhalative (dust), Long-term - systemic effects, 0,11 mg/m³
Industrial, dermal, Long-term - systemic effects, 15,33 mg/kg bw/day
general population, inhalative (dust), Long-term - systemic effects, 0,033 mg/m³
general population, dermal, Long-term - systemic effects, 9,42 mg/kg bw/day
general population, oral, Long-term - systemic effects, 9,42 µg/kg bw/day

PNEC

Substance
Cobalt disodium ethylenediaminetetraacetate, CAS: 15137-09-4
freshwater, 0,1 mg/L
seawater, 0,01 mg/L
sediment (freshwater), 758 µg/kg sediment dw
sediment (seawater), 75,8 µg/kg sediment dw
soil, 563,6 µg/kg soil dw
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
freshwater, 0,1 mg/L
seawater, 10 µg/L
sediment (seawater), 46 µg/kg
sediment (freshwater), 0,46 mg/kg
soil, 0,1 mg/kg
Sodium selenite, CAS: 10102-18-8
freshwater, 5,85 µg/L
seawater, 4,31 µg/L
sewage treatment plants (STP), 3,285 µg/L
sediment (freshwater), 18 mg/kg
sediment (seawater), 13,44 mg/kg
soil, 0,22 mg/kg

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	safety glasses (EN 166:2001)
Hand protection	0,7 mm; Viton, >480 min (EN 374-1/-2/-3). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Protective clothing (EN 340)
Other	Avoid contact with eyes and skin.
Respiratory protection	Breathing apparatus in the event of aerosol or mist formation. short term: filter apparatus, filter P1 (DIN EN 143)
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

Physical state	liquid
Form	liquid
Color	violet
Odor	odourless
Odour threshold	not determined
pH-value	7,5
pH-value [1%]	not determined
Boiling point or initial boiling point and boiling range [°C]	not determined
Flash point [°C]	not applicable
Flammability	non flammable
Lower explosion limit	not determined
Upper explosion limit	not determined
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/cm³]	1,17
Relative density	not determined
Bulk density [kg/m³]	not applicable
Solubility in water	completely miscible
Solubility other solvents	No information available.
Partition coefficient n-octanol/water (log value)	not determined
Kinematic viscosity	not determined
Relative vapour density	not determined
Melting point [°C]	not determined
Auto-ignition temperature [°C]	not self-igniting
Decomposition temperature [°C]	not determined
Particle characteristics	not applicable

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

See SECTION 10.3.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Contact with acids liberates toxic gas.

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

Acids

10.6 Hazardous decomposition products

Hydrogen selenide

SECTION 11: Toxicological information

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

Acute oral toxicity

Product
ATE-mix, oral, 309,2 mg/kg

Substance
Cobalt disodium ethylenediaminetetraacetate, CAS: 15137-09-4
LD50, oral, Rat, 729 mg/kg
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
LD50, oral, Rat, 10000 mg/kg
Sodium selenite, CAS: 10102-18-8
LD50, oral, Rat, 7 mg/kg

Acute dermal toxicity

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

Substance
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
LD50, dermal, Rat, > 2000 mg/kg

Acute inhalational toxicity

Product
ATE-mix, inhalativ (dust/mist), 2,28 mg/L (4h)

Substance
Sodium selenite, CAS: 10102-18-8
LC50, inhalativ (dust), Rat, 0,052 µg/L

Serious eye damage/irritation

Irritant
Based on the available information, the classification criteria are fulfilled.
Calculation method

Substance
Cobalt disodium ethylenediaminetetraacetate, CAS: 15137-09-4
Rabbit (eye), (EDTA Disodium), OECD 405, Slight irritant effect - does not require labelling.
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
Eye, Rabbit, non-irritating
Sodium selenite, CAS: 10102-18-8
Eye, 3D reconstituted human corneal epithelium model, OECD 437, irritant

Skin corrosion/irritation

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

Substance
Cobalt disodium ethylenediaminetetraacetate, CAS: 15137-09-4
Human, (10% EDTA cream), non-irritating
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
dermal, Human, non-irritating
Sodium selenite, CAS: 10102-18-8
dermal, Reconstituted human epidermis model, OECD 439, irritant

Respiratory or skin sensitisation

May cause an allergic skin reaction.
Based on available data, the classification criteria are not met.
Calculation method

Substance

Cobalt disodium ethylenediaminetetraacetate, CAS: 15137-09-4
dermal, Guinea pig, (Cobalt sulphate), OECD 406, sensitising
dermal, Guinea pig, (EDTA trisodium salt, 10%), non-sensitizing
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
dermal, Guinea pig, non-sensitizing
Sodium selenite, CAS: 10102-18-8
dermal, mouse, OECD 429, sensitising

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

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

Substance
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
NOAEL, oral, Rat, 500 mg/kg bw/day, no adverse effect observed

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

Substance
Cobalt disodium ethylenediaminetetraacetate, CAS: 15137-09-4
in vitro, negativ
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
in vitro, OECD 471, negativ
Sodium selenite, CAS: 10102-18-8
in vitro, OECD 476, negativ

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

- Fertility

Substance
Dihydrogen [(ethylenedinitrilo)tetraacetato]nickelate, CAS: 25481-21-4
NOAEL, oral, Rat, 500 mg/kg bw/day, no adverse effect observed

- Development No information available.

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.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

11.2.2 Other information none

SECTION 12: Ecological information

12.1 Toxicity

Substance
Sodium selenite, CAS: 10102-18-8
LC50, (48h), Daphnia magna, 550 µg Se/L
LC50, (96h), Morone saxatilis, 3300 µg Se/L
NOEC, (72h), Algae, 11000 µg Se/L

12.2 Persistence and degradability

Behaviour in environment compartments	No information available.
Behaviour in sewage plant	No information available.
Biological degradability	No information available.

12.3 Bioaccumulative potential

Product has having no bioaccumulation potential.

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 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Do not discharge product unmonitored into the environment.

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)	060313*

Contaminated packaging

	Contaminated packing should be disposed of as product waste.
Waste no. (recommended)	150110* packaging containing residues of or contaminated by hazardous substances 150102

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

SECTION 15: Regulatory information

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

EEC-REGULATIONS	2008/98/EG (2000/532/EC); 2010/75/EU; 2004/42/EG; (EG) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EWG ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 2024/573; (EU) 2019/1148; (EU) 2019/1021, (EU) 2023/707
- Comment on component parts	Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
- Annex XIV (REACH)	According to Annex XIV of Regulation (EC) 1907/2006 (REACH) the product does not contain any substances ≥ 0.1% that are subject to authorisation.
- Annex XVII (REACH)	According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product contains ≥ 0.1% of substances with the following restrictions. 27, 75
	According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product is subject to the following restrictions. 3
TRANSPORT-REGULATIONS	ADR (2025); IMDG-Code (2025, 42. Amdt.); IATA-DGR (2025)
NATIONAL REGULATIONS (EU):	
- 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)	not relevant

15.2 Chemical safety assessment

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H411 Toxic to aquatic life with long lasting effects.
H400 Very toxic to aquatic life.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H300 Fatal if swallowed.

H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.

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

This document does not comply with Regulation (EC) No 1907/2006, article 31 (5) and may be used for internal purposes only.

Classification procedure

Acute Tox. 4: H302 Harmful if swallowed. (Calculation method)
Acute Tox. 4: H332 Harmful if inhaled. (Calculation method)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)
Eye Irrit. 2: H319 Causes serious eye irritation. (Calculation method)
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects. (Calculation method)

Modified position

none