Draslovka

Environmental Product Declaration

In accordance with ISO 14025:2006 and
EN 15804:2012+A2:2019/AC:2021

Sodium Cyanide (98% solid briquettes)

EPD of a specific product

Programme:	National Environmental Labelling Program
Programme operator:	Ministry of the Environment of the Czech Republic
Date of publication:	07.10.2025
Date of revision:	-
Date of validity:	06.10.2030

General information

Programme	National Environmental Labelling Program
Adress	Ministry of the Environment of the Czech Republic Vršovická 1442/65 Prague 10, 100 10, Czech Republic
Website	www.cenia.cz, www.ekoznacka.cz

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the core Product Category Rules (PCR)
EN 15804:2012+A2:2019/AC:2021
Independent verification of the declaration and data according to EN ISO 14025:2010 ☑ External ☐ Internal

Life Cycle Assessment (LCA)
LCA accountability: Luboš Nobilis, THC SERVIS s.r.o.. Revoluční 1082/8 110 00 Praha 1 - Nové Město, Czech Republic, info@thcs.cz
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☑ EPD verification by individual verifier Third-party verifier: Prof. Ing. Vladimír Kočí, Ph.D., MBA; LCA Studio; Šárecká 1962/5, 160 00 Prague 6, Czech Republic, vladimir.koci@lcastudio.cz
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☑ No

The EPD owner has sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Manufacturing company and	Lučební závody Draslovka a.s. Kolín
EPD owner	Havlíčkova 605, 280 02 Kolín IV Czech Republic Registration №: 46357351 VAT №: CZ46357351
Production site and address	Havlíčkova 605, 280 02 Kolín IV Czech Republic
Contacts	Person: Simona Coufalová, Head of Environment and Management Systems Department Phone: +420 601 349 609 E-mail: simona.coufalova@draslovka.com Web: https://www.draslovka.com/

Draslovka is a chemical technologies, products and services company creating value and improving sustainability in several industries, including mining, agriculture and manufacturing.

Today, Draslovka is best known as the world's largest producer of sodium cyanide, a chemical vital for gold mining; however its most important contribution to the sector is its Glycine Leaching Technology, the company's proprietary technology that leaches metals in a more sustainable and economic manner. Draslovka also manufactures other specialist chemicals and reagents and provides class-leading chemical application services to the mining and pest control industries, as well as AI-enabled support services.

Product information

Sodium cyanide is most frequently used in precious metals mining and recovery. NaCN has historically replaced the older method of mining with toxic and stable mercury. Today, it is the most gentle chemical substance involved in gold mining. Cyanide compounds in liquid form can extract gold from ore that contains even only a few milligrams.

Parameter	Unit	Value
Chemical formula	-	NaCN
Molecular weight	g/mol	49,0072
CAS No.		143-33-9
Density	g/cm^3	1,5955
Melting point	°C	563,7
Appearance	-	white solid
Odour	-	faint bitter almond-like

Content declaration

Product components	(kg)	Post-consumer recycled material*	Biogenic material, weight-% and kg C/DU
Sodium Cyanide	≥ 0.98	0	0
Alkalinity as NaOH	0.001-0.008	0	0
Sodium carbonate Na_2CO_3	≤ 0.008	0	0
Sodium formate HCOONa	≤ 0.006	0	0
Surface moisture	≤ 0.002	0	0
TOTAL	**1.00**	**0**	**0**
Packaging materials	**(kg)**	**Weight-% (vs product)**	**Weight biogenic carbon, kg C/DU**
Var. 1. / 50 kg / steel barrel + PE bag inside			
Steel barrel	0.0920	9.20%	0
LDPE bag	0.0033	0.33%	0
TOTAL var. 1	0.0955	9.55%	0
Var. 2. / 900 kg / wooden box + big bag inside			
Wooden box	0.0330	3.30%	0.0149
PP big bag	0.0028	0.28%	0
TOTAL var. 2	0.0358	3.58%	0

Note: *There are no dangerous substances from the candidate list of SVHC for authorisation in this product*

Biogenic carbon content

BIOGENIC CARBON CONTENT ***per 1 kg of product***	
Biogenic carbon content in product	0
Biogenic carbon content in accompanying packaging - steel barrel + PE bag inside	0
Biogenic carbon content in accompanying packaging - wooden box + big bag inside	0.0149 kg

UN CPC code: 3427 Cyanides, cyanide oxides and complex cyanides; fulminates, cyanates and thiocyanates; silicates; borates; perborates; salts of oxometallic or peroxometallic acids

LCA information

Declared unit:	**1 kg of Sodium cyanide (98% solid briquettes)** *made by Draslovka Kolín a.s.*
Reference service life:	not applicable
Time representativeness:	2023
Database(s) and LCA software used:	Ecoinvent 3.11 (using the EN15804 proc./cut off model), Simapro v. 9.6 EN 15804 reference package based on EF 3.1 *(https://eplca.jrc.ec.europa.eu/LCDN/developerEF.html)*
Cut-off rules:	Neglected flow in all modules is less than 1% of the energy use and total mass.
Allocation method:	The product model includes the specific material composition and energy and fuel consumption for the specific product processing (production takes place in separately monitored facilities). For common inputs (fuels for internal transport, electricity and natural gas for administration and common areas, waste production and air emissions), a weight allocation related to the total annual production (t) was used. Economic allocation was used to account for heat from exothermic reactions sold outside the product system. Production is on one site in different sections.
Description of system boundaries:	The type of EPD is Cradle to Gate with modules C1-C4 and module D: Modules A1-A3, C1-C4, and D
Infrastructure/capital goods:	Infrastructure is part of the genetic processes used for upstream and downstream. Infrastructure was not considered for the Core phase

Life Cycle Phases

Production stage (A1-A3)

The A1 module contains primarily the production of chemicals for the production of sodium cyanide. These are sodium and potassium hydroxide and hydrogen cyanide, made also in Draslovka site mainly from methane (extracted from natural gas) and ammonia.

Phase A2 includes the transportation of the above-mentioned materials to production in phase A3 and internal transport (fuel consumption).

In production (A3), the chemical processes for hydrogen cyanide and sodium cyanide take place. This is related to the consumption of electricity, natural gas and residual gas energy use with air emissions production.

Two variants of packaging are used for product – steel barrel + LDPE bag or wooden box + PP bigbag.

Production generates waste from production (sludge etc.) and waste packaging (plastics, paper and cardboard, mixed).

GWP-GHG from the production of electricity: 0.66 $kgCO_2eq/kWh$ *(Czech residual mix, contains: 50,8 % of fossil fuels, 42.8 % of nuclear, 6,4 % of renewable sources)*

Transport to the construction stage (A4)

Not declared.

Construction-Installation (A5)

Not declared.

Use stage (B1-B7)

Not declared.

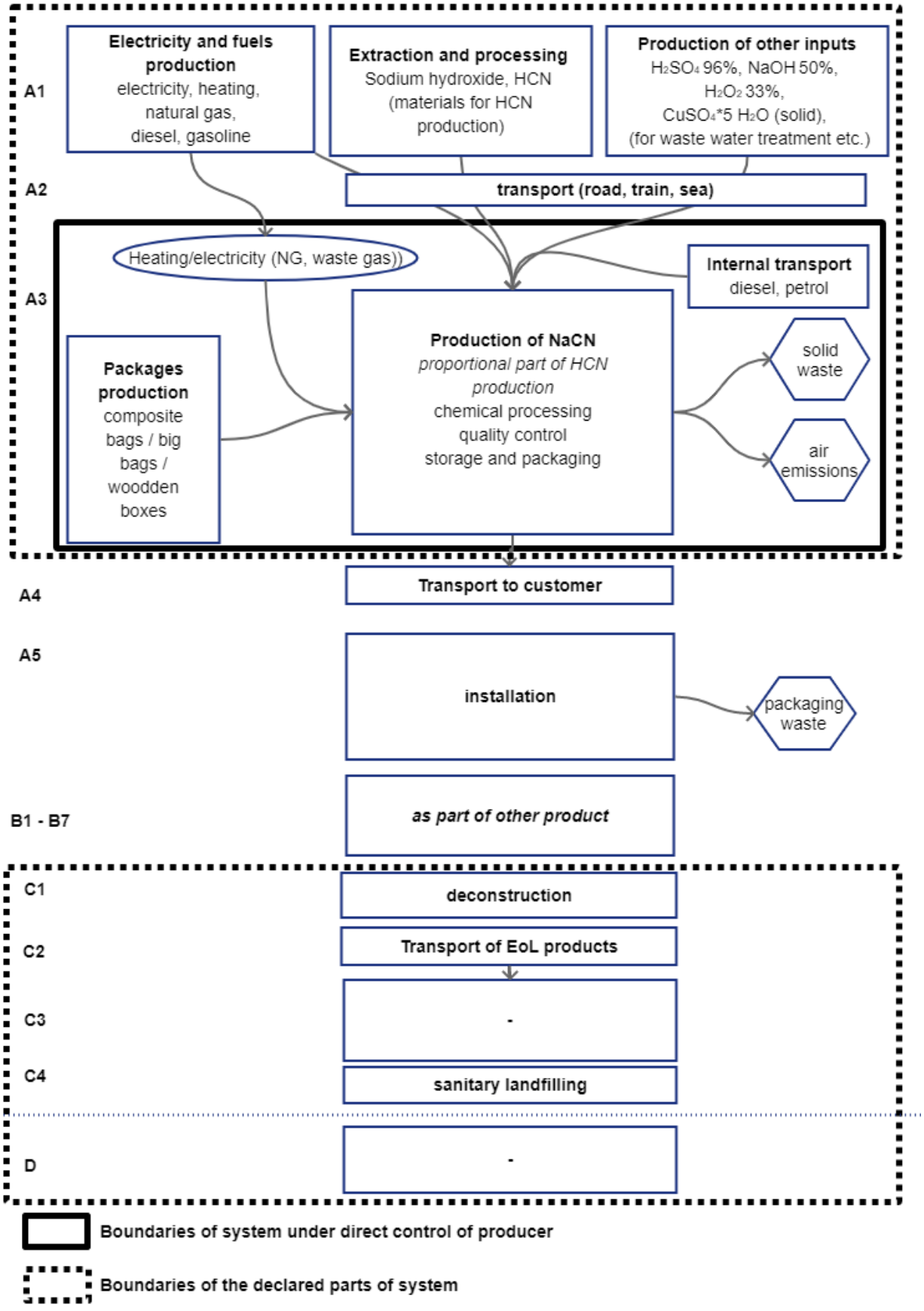
End-of-Life stage (C1-C4)

The C1 and C3 modules are expected with no inputs or outputs. In the C2 module, transport for landfilling at a distance of 50 km is considered. In the C4 module, the neutralisation of leach residues is calculated.

Benefits and loads (D) - Future Reuse, Recycling or Energy Recovery Potentials

Beyond the system boundary, no avoiding products are considered.

System diagram



LCA Results information

	Product stage			Construction stage		Use stage	End of life stage				Benefits and loads beyond the system boundary
	Raw material supply	Transport	Manufacturing	Transport	Construction-Installation process	Use Maintenance Repair Replacement Refurbishment Operational energy use Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-recovery
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1 - B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	**X**	**X**	**X**	**ND**	**ND**	**ND**	**X**	**X**	**X**	**X**	**X**
Geography	**EU**	**EU**	**CZ**	-	-	-	**GLO**	**GLO**	**GLO**	**GLO**	**GLO**
Specific data	**≥ 90%**			-	-	-	-	-	-	-	-
Variation - products	**0%**			-	-	-	-	-	-	-	-
Variation - sites	**0%**			-	-	-	-	-	-	-	-
	X – module declared ***ND – module not declared***										

In accordance with EN 15804+A2:2019/AC:2021, the environmental impacts are declared using the EC-JRC basic characterisation factors (reference package based on EF 3.1). Specific data are derived from the operation, and general data are derived from the Ecoinvent database.

The estimated impact results are only relative data that do not indicate the endpoints of the impact categories, threshold exceedances, safety margins or risks.

All emissions to air, water and land and all materials and energy used have been included in the calculation.

Note: It is not recommended to use the results of modules A1-A3 without taking into account the results of module C.

CORE ENVIRONMENTAL IMPACTS *per 1 kg of Sodium cyanide*

Impact category	Unit	A1-A3 bigbag	A1-A3 cans	C1	C2	C3	C4	D
Climate change - Total	kg CO2 eq	6.20E+00	6.48E+00	0.00E+00	9.51E-03	0.00E+00	2.80E-04	0.00E+00
Climate change - Fossil	kg CO2 eq	6.19E+00	6.43E+00	0.00E+00	9.50E-03	0.00E+00	2.80E-04	0.00E+00
Climate change – Biogenic	kg CO2 eq	2.39E-03	5.13E-02	0.00E+00	6.41E-06	0.00E+00	-4.84E-08	0.00E+00
Climate change - Land use and LU change	kg CO2 eq	3.10E-03	3.24E-03	0.00E+00	3.16E-06	0.00E+00	5.44E-07	0.00E+00
Ozone depletion	kg CFC11 eq	2.34E-07	2.36E-07	0.00E+00	1.89E-10	0.00E+00	4.02E-12	0.00E+00
Acidification	mol H+ eq	1.71E-02	1.81E-02	0.00E+00	1.98E-05	0.00E+00	3.31E-06	0.00E+00
Eutrophication, freshwater	kg P eq	1.37E-03	1.47E-03	0.00E+00	6.43E-07	0.00E+00	2.24E-04	0.00E+00
Eutrophication, marine	kg N eq	3.68E-03	3.89E-03	0.00E+00	4.75E-06	0.00E+00	6.45E-06	0.00E+00
Eutrophication, terrestrial	mol N eq	3.34E-02	3.55E-02	0.00E+00	5.13E-05	0.00E+00	1.56E-05	0.00E+00
Photochemical ozone formation	kg NMVOC eq	1.60E-02	1.68E-02	0.00E+00	3.29E-05	0.00E+00	3.83E-06	0.00E+00
Resource use, fossils*	MJ	3.09E-05	3.21E-05	0.00E+00	3.09E-08	0.00E+00	7.67E-10	0.00E+00
Resource use, minerals and metals*	kg Sb eq	8.83E+01	9.09E+01	0.00E+00	1.34E-01	0.00E+00	3.68E-03	0.00E+00
Water use*	m3 depriv.	3.45E+00	3.61E+00	0.00E+00	7.54E-04	0.00E+00	1.71E-04	0.00E+00

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

** Disclaimer: The results of this environmental impact indicator shall be used with care, as the uncertainties of these results are high or as there is limited experience with the indicator.*

ADDITIONAL ENVIRONMENTAL IMPACTS *per 1 kg of Sodium cyanide*

Impact category	Unit	A1-A3 bigbag	A1-A3 cans	C1	C2	C3	C4	D
Particulate matter	disease inc.	1.13E-07	1.32E-07	0.00E+00	6.99E-10	0.00E+00	5.53E-11	0.00E+00
Human toxicity, non-cancer*	CTUh	3.45E-08	3.91E-08	0.00E+00	8.65E-11	0.00E+00	3.98E-11	0.00E+00
Human toxicity, cancer*	CTUh	2.77E-08	4.84E-08	0.00E+00	6.75E-11	0.00E+00	3.36E-12	0.00E+00
Ecotoxicity, freshwater	CTUe	2.51E+01	3.19E+01	0.00E+00	3.64E-02	0.00E+00	2.54E+00	0.00E+00
Land use*	Pt	1.54E+01	1.18E+01	0.00E+00	8.07E-02	0.00E+00	1.27E-01	0.00E+00
Ionising radiation**	kBq U-235 eq	5.60E-01	5.79E-01	0.00E+00	1.73E-04	0.00E+00	4.53E-06	0.00E+00

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

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*** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionising radiation from the soil, from radon and from some construction materials is also not measured by this indicator.*

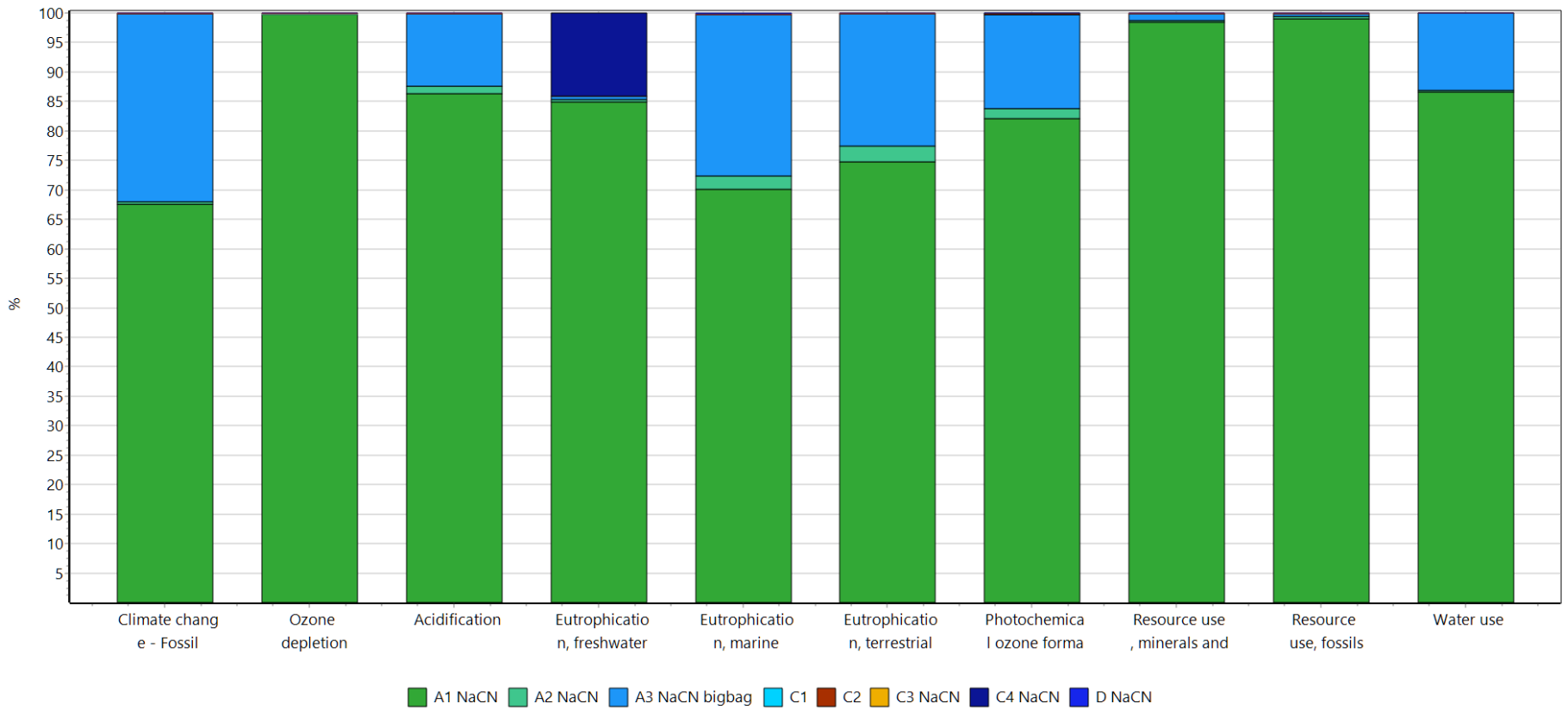
USE OF RESOURCES *per 1 kg of Sodium cyanide*

Impact category	Unit	A1-A3 bigbag	A1-A3 cans	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ, net calorific value	6.13E+00	5.64E+00	0.00E+00	2.29E-03	0.00E+00	1.41E-04	0.00E+00
Use of renewable primary energy resources used as raw materials	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ, net calorific value	6.13E+00	5.64E+00	0.00E+00	2.29E-03	0.00E+00	1.41E-04	0.00E+00
Use of non- renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ, net calorific value	8.83E+01	9.09E+01	0.00E+00	1.34E-01	0.00E+00	3.69E-03	0.00E+00
Use of non- renewable primary energy resources used as raw materials	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non- renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ, net calorific value	8.83E+01	9.09E+01	0.00E+00	1.34E-01	0.00E+00	3.69E-03	0.00E+00
Use of secondary material	kg	2.34E-02	5.70E-02	0.00E+00	6.20E-05	0.00E+00	1.90E-06	0.00E+00
Use of renewable secondary fuels	MJ, net calorific value	1.79E-02	3.37E-03	0.00E+00	7.84E-07	0.00E+00	3.59E-08	0.00E+00
Use of non renewable secondary fuels	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	8.17E-02	8.56E-02	0.00E+00	1.86E-05	0.00E+00	4.09E-06	0.00E+00

WASTE PRODUCTION and OUTPUT FLOWS *per 1 kg of Sodium cyanide*

Impact category	Unit	A1-A3 bigbag	A1-A3 cans	C1	C2	C3	C4	D
Hazardous waste	kg	2.88E-01	3.69E-01	0.00E+00	1.95E-04	0.00E+00	9.63E-06	0.00E+00
Non-hazardous waste disposed	kg	1.09E+01	1.19E+01	0.00E+00	4.12E-03	0.00E+00	1.72E-04	0.00E+00
Radioactive waste disposed/stored	kg	1.47E-04	1.52E-04	0.00E+00	4.31E-08	0.00E+00	1.11E-09	0.00E+00
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	1.30E-03	1.37E-03	0.00E+00	1.02E-06	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	5.03E-06	6.00E-06	0.00E+00	8.60E-09	0.00E+00	0.00E+00	0.00E+00
Exported energy - electricity	MJ per energy carrier	1.55E-01	1.57E-01	0.00E+00	2.30E-05	0.00E+00	0.00E+00	0.00E+00
Exported energy - heat	MJ per energy carrier	3.42E-02	3.75E-02	0.00E+00	3.33E-05	0.00E+00	0.00E+00	0.00E+00

Chart of LCA results in life cycle phases



Method: EN 15804 +A2 LCIA & LCI indicators V1.00 / EN 15804 official / Characterization
Analyzing 1 p 'NaCN BB';

Other Environmental Performance Indicators

None included

Additional Environmental Information

Product-related or management system-related certifications:

ISO 14001:2025, ISO 9001:2015, ISO 45001:2018, ISO 50001:2018, ICMC, Responsible Care

More information included. *Sustainability report* you can find on https://www.draslovka.com/sustainability

Additional Social and Economic Information

The Committee for HR Matters and Remuneration assists the Board of Directors in human resources and remuneration matters. More information can be found on https://www.draslovka.com/social

Information Related to Sector EPD

Not applicable

References

ISO 14040/44/ DIN EN ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework (ISO14040:2006) and Requirements and guidelines (ISO 14044:2006)

ISO 14044:2006-10, Environmental Management — Life Cycle Assessment — Requirements and Instructions (ISO 14044:2006); EN ISO 14044:2006

ISO 14020:2022 Environmental statements and programmes for products — Principles and general requirements

ISO 14025/ DIN EN ISO 14025:2009-11: Environmental labels and declarations - Type III environmental declarations — Principles and procedures

EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the construction products product category

/Ecoinvent / Ecoinvent Centre, www.ecoinvent.org

/SimaPro/ SimaPro LCA Software, Pré Consultants, the Netherlands, www.pre-sustainability.com