acc. to Regulation (EC) No. 1907/2006 (REACH)

#### Natriumhexanitrocobaltat(III) p.a., ACS

article number: 4409 date of compilation: 2019-02-01 Version: **3.0 en** Revision: 2024-03-02

Replaces version of: 2022-06-24

Version: (2)



#### **Product identifier** 1.1

Identification of the substance Natriumhexanitrocobaltat(III) p.a., ACS

Article number 4409

EC number 237-077-7 CAS number 13600-98-1

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

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for products which come into contact

with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-

stuffs.

#### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 **e-mail:** sicherheit@carlroth.de Website: www.carlroth.de

sheet:

sicherheit@carlroth.de e-mail (competent person):

#### 1.4 **Emergency telephone number**

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

# **SECTION 2: Hazards identification**

#### 2.1 Classification of the substance or mixture

#### Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
2.14	Oxidising solid	2	Ox. Sol. 2	H272
3.45	Skin sensitisation	1	Skin Sens. 1	H317
3.6	Carcinogenicity	2	Carc. 2	H351

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For full text of abbreviations: see SECTION 16

#### 2.2 Label elements

#### Labelling

Signal word Danger

#### **Pictograms**

GHS03, GHS07, GHS08



#### **Hazard statements**

H272 May intensify fire; oxidiser

H317 May cause an allergic skin reaction H351 Suspected of causing cancer

#### **Precautionary statements**

#### **Precautionary statements - prevention**

P201 Obtain special instructions before use

P220 Keep away from clothing as well as other incompatible materials

P280 Wear protective gloves/eye protection

### **Precautionary statements - response**

P302+P352 IF ON SKIN: Wash with plenty of water/...

P308+P313 IF exposed or concerned: Get medical advice/attention

For professional users only

#### 2.3 Other hazards

#### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

#### **Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0.1\%$ .

# **SECTION 3: Composition/information on ingredients**

#### 3.1 Substances

Name of substance Natriumhexanitrocobaltat(III)

Molecular formula  $Na_3Co(NO_2)_6$  Molar mass  $403,9\,^{9}/_{mol}$  CAS No 13600-98-1 EC No 237-077-7

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### **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures



#### **General notes**

Take off contaminated clothing.

#### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

### **Following skin contact**

Rinse skin with water/shower. After contact with skin, wash immediately with plenty of water. In case of skin reactions, consult a physician.

#### Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following ingestion

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### 4.2 Most important symptoms and effects, both acute and delayed

Following ingestion: Allergic reactions, Malaise, Diarrhoea, Blood pressure drop, Renal impairment, Cardiac arrhythmias

#### 4.3 Indication of any immediate medical attention and special treatment needed

none

# **SECTION 5: Firefighting measures**

#### 5.1 Extinguishing media



#### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

#### Unsuitable extinguishing media

water jet

#### 5.2 Special hazards arising from the substance or mixture

Oxidising property. Non-combustible.

#### **Hazardous combustion products**

In case of fire may be liberated: Nitrogen oxides (NOx)

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In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

#### **SECTION 6: Accidental release measures**

#### 6.1 Personal precautions, protective equipment and emergency procedures



#### For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

#### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

#### 6.3 Methods and material for containment and cleaning up

### Advice on how to contain a spill

Covering of drains. Take up mechanically.

### Advice on how to clean up a spill

Take up mechanically. Control of dust.

#### Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

#### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

# **SECTION 7: Handling and storage**

#### 7.1 Precautions for safe handling

Avoid exposure. Avoid dust formation.

### Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits. Keep away from combustible material.

### Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

#### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

# Incompatible substances or mixtures

Observe hints for combined storage. Keep/store away from clothing/combustible materials. Take any precaution to avoid mixing with combustibles.

#### Consideration of other advice:

### **Ventilation requirements**

Use local and general ventilation.

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# 5.3 Advice for firefighters

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# SECTION 8: Exposure controls/personal protection

#### 8.1 **Control parameters**

#### **National limit values**

#### Occupational exposure limit values (Workplace Exposure Limits)

Coun try	Name of agent	CAS No	Identifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
GB	dust		WEL	10			i	EH40/2005
GB	dust		WEL	4			r	EH40/2005

**Notation** 

Ceiling value is a limit value above which exposure should not occur Inhalable fraction Ceiling-C

Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8

hours time-weighted average (unless otherwise specified)

#### 8.2 **Exposure controls**

#### Individual protection measures (personal protective equipment)

#### **Eye/face protection**





Use safety goggle with side protection.

#### Skin protection





### hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

#### type of material

NBR (Nitrile rubber)

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# Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

#### 7.3 Specific end use(s)

No information available.

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>0,11 mm

#### breakthrough times of the glove material

>480 minutes (permeation: level 6)

#### other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

#### **Respiratory protection**





Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

#### **Environmental exposure controls**

Keep away from drains, surface and ground water.

# **SECTION 9: Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

Physical state solid

Form powder

Colour yellowish brown
Odour characteristic

Melting point/freezing point 220 °C

Boiling point or initial boiling point and boiling not determined

range

Flammability non-combustible
Lower and upper explosion limit not determined
Flash point not applicable

Auto-ignition temperature not determined

Decomposition temperature 220 °C

pH (value) 5 (in aqueous solution: 100 <sup>g</sup>/<sub>l</sub>, 20 °C)

Kinematic viscosity not relevant

Solubility(ies)

Water solubility ~720  $^{\rm g}/_{\rm l}$  at 20  $^{\rm o}$ C

Partition coefficient

Partition coefficient n-octanol/water (log value): not relevant (inorganic)

Vapour pressure not determined

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Density and/or relative density

Density not determined

Relative vapour density Information on this property is not available.

Bulk density  $\sim 480 \, \mathrm{kg/m^3}$ 

Particle characteristics No data available.

Other safety parameters

Oxidising properties oxidiser

9.2 Other information

Information with regard to physical hazard

classes:

There is no additional information.

Other safety characteristics: There is no additional information.

# **SECTION 10: Stability and reactivity**

#### 10.1 Reactivity

It's a reactive substance. Oxidising property.

#### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

Violent reaction with: Reducing agents, Combustible materials, Organic materials, Amine

#### 10.4 Conditions to avoid

Keep away from heat. Decompostion takes place from temperatures above: 220 °C.

#### 10.5 Incompatible materials

substance, leather articles

#### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

# SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

Classification acc. to GHS

#### **Acute toxicity**

Shall not be classified as acutely toxic.

#### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

#### Serious eye damage/eye irritation

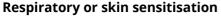
Shall not be classified as seriously damaging to the eye or eye irritant.

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#### **Germ cell mutagenicity**

Shall not be classified as germ cell mutagenic.

#### Carcinogenicity

#### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Shall not be classified as a specific target organ toxicant (single exposure).

### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

### **Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

### Symptoms related to the physical, chemical and toxicological characteristics

gastrointestinal complaints, diarrhoea, renal impairment, irreversible damage to internal organs

cough, Inhalation of dust may cause irritation of the respiratory system

### • If on skin

May produce an allergic reaction, pruritis, localised redness

#### Other information

Other adverse effects: Cardiac arrhythmias, Blood pressure drop, Methaemoglobinaemia

#### 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0.1\%$ .

#### 11.3 Information on other hazards

There is no additional information.

# **SECTION 12: Ecological information**

Shall not be classified as hazardous to the aquatic environment.

#### 12.2 Persistence and degradability

Data are not available.

#### 12.3 Bioaccumulative potential

Data are not available.

# 12.4 Mobility in soil

Data are not available.

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May cause an allergic skin reaction.

Suspected of causing cancer.

### Specific target organ toxicity - single exposure

#### If swallowed

#### If in eyes

slightly irritant but not relevant for classification

#### If inhaled

#### 12.1 Toxicity

acc. to Regulation (EC) No. 1907/2006 (REACH)

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Data are not available.

#### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0.1\%$ .

#### 12.7 Other adverse effects

Data are not available.

# **SECTION 13: Disposal considerations**

#### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains.

#### Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

### 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

#### Properties of waste which render it hazardous

**HP 2** oxidising

**HP 7** carcinogenic

**HP 13** sensitising

#### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

# **SECTION 14: Transport information**

#### 14.1 UN number or ID number

ADRRID UN 1479
IMDG-Code UN 1479
ICAO-TI UN 1479

### 14.2 UN proper shipping name

ADRRID OXIDIZING SOLID, N.O.S. IMDG-Code OXIDIZING SOLID, N.O.S. ICAO-TI Oxidizing solid, n.o.s.

Technical name Sodium hexanitrocobaltate(III)

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non-environmentally hazardous acc. to the dan-

gerous goods regulations

14.3	Transport hazard class(es)	
	ADRRID	5.1
	IMDG-Code	5.1
	ICAO-TI	5.1
14.4	Packing group	
	ADRRID	II
	IMDG-Code	II
	ICAO-TI	II

### 14.6 Special precautions for user

**Special provisions (SP)** 

14.5 Environmental hazards

Provisions for dangerous goods (ADR) should be complied within the premises.

### 14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

# 14.8 Information for each of the UN Model Regulations

# Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)Additional information

information	
Proper shipping name	OXIDIZING SOLID, N.O.S.
Particulars in the transport document	UN1479, OXIDIZING SOLID, N.O.S., (Sodium hexanitrocobaltate(III)), 5.1, II, (E)
Classification code	02
Danger label(s)	5.1
551	
Special provisions (SP)	274
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 kg
Transport category (TC)	2
Tunnel restriction code (TRC)	E
Hazard identification No	50
Emergency Action Code	1Y
Regulations concerning the International Carria information	age of Dangerous Goods by Rail (RID)Additional
Classification code	02
Danger label(s)	5.1

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acc. to Regulation (EC) No. 1907/2006 (REACH)

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Excepted quantities (EQ) E2
Limited quantities (LQ) 1 kg
Transport category (TC) 2
Hazard identification No 50

### International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name OXIDIZING SOLID, N.O.S.

Particulars in the shipper's declaration UN1479, OXIDIZING SOLID, N.O.S., (Sodium hex-

anitrocobaltate(III)), 5.1, II

Marine pollutant -

Danger label(s) 5.1



Special provisions (SP) 274, 900

Excepted quantities (EQ) E2
Limited quantities (LQ) 1 kg
EmS F-A, S-Q

Stowage category B

### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name Oxidizing solid, n.o.s.

Particulars in the shipper's declaration UN1479, Oxidizing solid, n.o.s., (Sodium hex-

anitrocobaltate(IIĬ)), 5.1, II

Danger label(s) 5.1



Special provisions (SP)

Excepted quantities (EQ)

Limited quantities (LQ)

2,5 kg

# **SECTION** 15: Regulatory information

# 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)

### **Seveso Directive**

2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements		Notes
P8	oxidising liquids and solids	50	200	55)

#### Notation

55) Oxidising liquids, category 1, 2 or 3, or oxidising solids, category 1, 2 or 3

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#### **Deco-Paint Directive**

VOC content	0 %
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#### **Industrial Emissions Directive (IED)**

VOC content	0 %
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Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

#### Water Framework Directive (WFD)

### **List of pollutants (WFD)**

Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Sodium hexanitrocobaltate(III)	Substances and preparations, or the breakdown products of such, which have been proved to pos- sess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine- related functions in or via the aquatic environment		a)	
Sodium hexanitrocobaltate(III)	Metals and their compounds		a)	

#### Legend

a) Indicative list of the main pollutants

#### Regulation on the marketing and use of explosives precursors

not listed

#### **Regulation on drug precursors**

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

Restrictions according to GB REACH, Annex 17

not listed

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#### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

#### **National inventories**

Country	Inventory	Status
AU	AIIC	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
KR	KECI	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TW	TCSI	substance is listed
VN	NCI	substance is listed

Legend

AIIC ECSI IECSC

Australian Inventory of Industrial Chemicals EC Substance Inventory (EINECS, ELINCS, NLP) Inventory of Existing Chemical Substances Produced or Imported in China Korea Existing Chemicals Inventory National Chemical Inventory New Zealand Inventory of Chemicals Philippine Inventory of Chemicals and Chemical Substances (PICCS) Taiwan Chemical Substance Inventory KECI

#### 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

# **SECTION 16: Other information**

#### Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.2		Hazard statements: change in the listing (table)	yes
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
15.1		National inventories: change in the listing (table)	yes

#### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)

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Abbr.	Descriptions of used abbreviations
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-li- cence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

### Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

#### List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H272	May intensify fire; oxidiser.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.

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#### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

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