



PRODUCT INFORMATION SHEET

MATERION

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

1.1. Product identifier

Trade name or designation of the mixture Cobalt Iron Nickel Product
Registration number -
Document number 264
Synonyms None.
Issue date 05-June-2015
Version number 02

1.3. Details of the supplier of the product information sheet

Supplier

Company name Materion Electronic Materials
Address 6070 Parkland Boulevard
Mayfield Heights, OH 44124
United States
Division
Telephone 1.216.383.4019
e-mail ehs@materion.com
Contact person Theodore Knudson

1.4. Emergency telephone number See Section 16.

Revision date 25-September-2023
Supersedes date 05-June-2015

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

Identified uses Not available.
Uses advised against None known.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Respiratory sensitisation	Category 1	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Carcinogenicity	Category 1B	H350 - May cause cancer.
Specific target organ toxicity - single exposure	Category 3 respiratory tract irritation	H335 - May cause respiratory irritation.
		H335 - May cause respiratory irritation.

Environmental hazards

Hazardous to the aquatic environment, long-term aquatic hazard	Category 3	H412 - Harmful to aquatic life with long lasting effects.
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Hazard summary Harmful if swallowed. May cause cancer. May cause irritation to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Prolonged exposure may cause chronic effects. Dangerous for the environment if discharged into watercourses. Occupational exposure to the substance or mixture may cause adverse health effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Cobalt, Iron

Hazard pictograms



Signal word

Danger

Hazard statements

	The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.
P284	Wear respiratory protection.

Response

P301 + P312	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P330	Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTRE/doctor.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.

Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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Supplemental label information

For further information, please contact the Product Stewardship Department at +1.216.383.4019.

2.3. Other hazards

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Cobalt	50 - 95	7440-48-4 231-158-0	01-2119517392-44-0000	027-001-00-9	Classification: Acute Tox. 4;H302, Skin Sens. 1;H317, Resp. Sens. 1;H334, Carc. 1B;H350, Repr. 2;H361
Iron	5 - 50	7439-89-6 231-096-4	-	-	Classification: -

List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments

The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information

IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or doctor/physician.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

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

May cause respiratory irritation. Coughing. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.

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

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards

No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media

Powder. Dry sand.

Unsuitable extinguishing media

Not available.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special firefighting procedures

Use water spray to cool unopened containers.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

Small Spills: Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not taste or swallow. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. TRK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	STEL	0,4 mg/m ³	Inhalable fraction.
	TWA	0,1 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³	Dust and fume.
		0,005 mg/m ³	Thoracic fraction.

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,1 mg/m ³	
Iron (CAS 7439-89-6)	TWA	6 mg/m ³	Inhalable fraction.

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	MAC	0,1 mg/m ³	

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,1 mg/m ³	Dust and fume.

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	Ceiling	0,1 mg/m ³	Aerosol, inhalable.
	TWA	0,05 mg/m ³	Aerosol, inhalable.
Iron (CAS 7439-89-6)	TWA	10 mg/m ³	

Denmark. Exposure Limit Values

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TLV	0,01 mg/m ³	Dust and fume.

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended

Components	Type	Value	
Cobalt (CAS 7440-48-4)	TWA	0,05 mg/m ³	

Finland. Workplace Exposure Limits

Components	Type	Value	
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³	

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,1 mg/m ³	Dust and fume.

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	
Cobalt (CAS 7440-48-4)	STEL	0,4 mg/m ³	
	TWA	0,1 mg/m ³	

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³	Dust and fume.

Ireland. Occupational Exposure Limits

Components	Type	Value	
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³	

Italy. Occupational Exposure Limits

Components	Type	Value	
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³	

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value	
Cobalt (CAS 7440-48-4)	TWA	0,5 mg/m ³	

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value	
Cobalt (CAS 7440-48-4)	TWA	0,05 mg/m ³	

Netherlands. OELs (binding)

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³	Dust and fume.

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TLV	0,02 mg/m ³	Fume.

Poland. Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817

Components	Type	Value	
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³	

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value
Cobalt (CAS 7440-48-4)	STEL	0,1 mg/m ³
	TWA	0,05 mg/m ³

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,05 mg/m ³
Iron (CAS 7439-89-6)	TWA	6 mg/m ³

Spain. Occupational Exposure Limits

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m ³	Inhalable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,05 mg/m ³	Inhalable fraction.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,1 mg/m ³

Biological limit values**Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV) , Social Affairs and Ministry of Health**

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	130 nmol/l	Cobalt	Urine	*

* - For sampling details, please see the source document.

France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	15 µg/l	Cobalt	Urine	*
	1 µg/l	Cobalt	Blood	*

* - For sampling details, please see the source document.

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	0,03 mg/g	Cobalt	Creatinine in urine	*
	0,058 µmol/mmol	Cobalt	Creatinine in urine	*

* - For sampling details, please see the source document.

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	20,03 µg/g	Cobalt	Creatinine in urine	*
	30 µg/l	Cobalt	Urine	*

* - For sampling details, please see the source document.

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	15 µg/l	Cobalto	Urine	*

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Components	Value	Determinant	Specimen	Sampling Time
	1 µg/l	Cobalto	Blood	*

* - For sampling details, please see the source document.

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	30 µg/l	Cobalt	Urine	*

* - For sampling details, please see the source document.

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. General ventilation normally adequate.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection If contact is likely, safety glasses with side shields are recommended.

Skin protection

- Hand protection Wear appropriate chemical resistant gloves.

- Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Environmental exposure controls Inform appropriate managerial or supervisory personnel of all environmental releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties****Appearance**

Physical state Solid.

Form Solid.

Colour Not available.

Odour None.

Odour threshold Not applicable.

pH Not applicable.

Melting point/freezing point 1495 °C (2723 °F) estimated

Initial boiling point and boiling range 2861 °C (5181,8 °F) estimated

Flash point Not applicable.

Evaporation rate Not applicable.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not applicable.

Flammability limit - upper (%)	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit – upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.
Vapour pressure	0,00001 hPa estimated
Vapour density	Not applicable.
Relative density	Not applicable.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity	Not applicable.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2. Other information	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation	May cause irritation to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful.
Skin contact	May cause an allergic skin reaction.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Harmful if swallowed.
Symptoms	May cause respiratory irritation. Coughing. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.
11.1. Information on toxicological effects	
Acute toxicity	Harmful if swallowed.
Skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation	Due to partial or complete lack of data the classification is not possible.
Respiratory sensitisation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	May cause cancer.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cobalt (CAS 7440-48-4)

2B Possibly carcinogenic to humans.

Reproductive toxicity Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Due to partial or complete lack of data the classification is not possible.

Aspiration hazard Due to partial or complete lack of data the classification is not possible.

Mixture versus substance information No information available.

Other information Not available.

SECTION 12: Ecological information

12.1. Toxicity Harmful to aquatic life with long lasting effects. Based on available data, the classification criteria are not met for hazardous to the aquatic environment, acute hazard.

Product	Species	Test Results
Cobalt Iron Nickel Product		
Aquatic		
Crustacea	EC50	Daphnia 10,9503 mg/l, 48 hours
Fish	LC50	Fish 945,1957 mg/l, 96 hours

12.2. Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

12.3. Bioaccumulative potential No data available.

Partition coefficient n-octanol/water (log Kow) Not available.

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No data available.

12.5. Results of PBT and vPvB assessment This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

12.6. Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

12.7. Additional information

Estonia Dangerous substances in soil Data

Cobalt (CAS 7440-48-4)

Cobalt (Co) 20 mg/kg

Cobalt (Co) 300 mg/kg

Cobalt (Co) 50 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

EU waste code The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Special precautions Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number UN3178

14.2. UN proper shipping name FLAMMABLE SOLID, INORGANIC, N.O.S.

14.3. Transport hazard class(es)

Class	4.1
Subsidiary risk	-
Label(s)	4.1
Hazard No. (ADR)	40
Tunnel restriction code	E

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Not available.

RID

14.1. UN number UN3178

14.2. UN proper shipping name FLAMMABLE SOLID, INORGANIC, N.O.S.

14.3. Transport hazard class(es)

Class	4.1
Subsidiary risk	-
Label(s)	4.1

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number UN3178

14.2. UN proper shipping name FLAMMABLE SOLID, INORGANIC, N.O.S.

14.3. Transport hazard class(es)

Class	4.1
Subsidiary risk	-
Label(s)	4.1

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

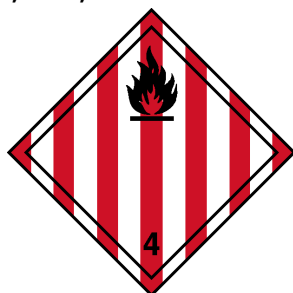
IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

ADN; ADR; RID



SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended
Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended
Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended.

National regulations

According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure.

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. Follow national regulation on the protection of workers from the risks of exposure to carcinogens and mutagens at work, in accordance with Directive 2004/37/EC, as amended.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
IATA: International Air Transport Association.
IBC: Intermediate Bulk Container.
IMDG: International Maritime Dangerous Goods.
MAC: Maximum Allowed Concentration.
MARPOL: International Convention for the Prevention of Pollution from Ships.
PBT: Persistent, bioaccumulative, toxic.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short term exposure limit.
TLV: Threshold Limit Value.
TWA: Time Weighted Average.
VLE: Exposure Limit Value.
VME: Exposure Average Value.
vPvB: Very persistent and very bioaccumulative.

References

Not available.

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Training information

Follow training instructions when handling this material.

Further information

Transportation Emergency

Call Chemtrec at:

US: 800.424.9300

International: 703.741.5970

Spain: 900.868.538

Switzerland: 0800.564.402

Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059

South Korea Toll-free Number – 080-880-0468

Disclaimer

To avoid any misunderstandings or incorrect assumptions by the receiver of the safety information, it should be made clear that the supplied information is not in the form of a Safety Data Sheet (SDS), but is actually a voluntary Product Information Sheet closely following the guidelines of the Safety Data Sheet – COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 (REACH/SDS).