

**COBALT CARBONYL**

Safety Data Sheet INCO030

Date of issue: 01/04/2015

Revision date: 30/08/2017

Version: 2.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form	: Substance
Physical state	: Solid
Substance name	: COBALT CARBONYL
Product code	: INCO030
Formula	: Co(CO) ₈
Synonyms	: OCTACARBONYLDICOBALT DICOBALT OCTACARBONYL COBALT TETRACARBONYL DIMER
Chemical family	: COBALT CARBONYL

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Use of the substance/mixture : Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet**GELEST, INC.**11 East Steel Road
Morrisville, PA 19067**USA**

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

info@gelest.com - www.gelest.com**GELEST INC.**Fritz-Klatte-Strasse 8
65933 Frankfurt**Germany**

T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM

info@gelestde.com - www.gelestde.com**1.4. Emergency telephone number**

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Self-Heating Substances and Mixtures, Category 1	H251
Acute toxicity (oral), Category 4	H302
Acute toxicity (inhalation:dust,mist) Category 2	H330
Skin sensitisation, Category 1	H317
Carcinogenicity, Category 2	H351
Reproductive toxicity, Category 2	H361
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

COBALT CARBONYL

Safety Data Sheet

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazard statements (CLP) :

H251 - Self-heating: may catch fire.
H302 - Harmful if swallowed.
H317 - May cause an allergic skin reaction.
H330 - Fatal if inhaled.
H351 - Suspected of causing cancer.
H361 - Suspected of damaging fertility or the unborn child.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP) :

P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P235 - In case of fire: keep cylinder cool by spraying with water
P260 - Do not breathe dust, mist.
P264 - Wash hands thoroughly after handling.
P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type :

Multi-constituent

Name :

COBALT CARBONYL

CAS-No. :

10210-68-1

EC-No. :

233-514-0

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Cobalt carbonyl	(CAS-No.) 10210-68-1 (EC-No.) 233-514-0	95 - 99	Self-heat. 1, H251 Acute Tox. 4 (Oral), H302 Acute Tox. 2 (Inhalation), H330 Skin Sens. 1, H317 Carc. 2, H351
Hexane	(CAS-No.) 110-54-3 (EC-No.) 203-777-6 (EC Index-No.) 601-037-00-0	1 - 5	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Hexane	(CAS-No.) 110-54-3 (EC-No.) 203-777-6 (EC Index-No.) 601-037-00-0	(C >= 5) STOT RE 2, H373

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general :

Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation :

Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

First-aid measures after skin contact :

Wash with plenty of water/.... Get medical advice/attention.

COBALT CARBONYL

Safety Data Sheet

First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER/doctor.

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

Symptoms/effects	: Suspected of causing cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.
Symptoms/effects after inhalation	: Fatal if inhaled. May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Water fog. Foam. Carbon dioxide. Dry chemical.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable. Self-heating: may catch fire. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid contact with skin and eyes. Do not breathe dust.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes. Do not breathe dust. Handle under inert atmosphere. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store away from light in sealed containers <5°C. Store locked up. Keep cool. Protect from sunlight.

Incompatible materials : Oxidizing agent.

Storage area : Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

COBALT CARBONYL

Safety Data Sheet

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Cobalt carbonyl (10210-68-1)		
Belgium	Limit value (mg/m ³)	0.1 mg/m ³
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	0.1 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.1 mg/m ³
Canada (Quebec)	VEMP (mg/m ³)	0.1 mg/m ³
Australia	TWA (mg/m ³)	0.1 mg/m ³
Hexane (110-54-3)		
EU	IOELV TWA (mg/m ³)	72 mg/m ³
EU	IOELV TWA (ppm)	20 ppm
Austria	MAK (mg/m ³)	72 mg/m ³
Austria	MAK (ppm)	20 ppm
Austria	MAK Short time value (mg/m ³)	288 mg/m ³
Austria	MAK Short time value (ppm)	80 ppm
Belgium	Limit value (mg/m ³)	72 mg/m ³
Belgium	Limit value (ppm)	20 ppm
Bulgaria	OEL TWA (mg/m ³)	72 mg/m ³
Bulgaria	OEL TWA (ppm)	20 ppm
Cyprus	OEL TWA (mg/m ³)	72 mg/m ³
Cyprus	OEL TWA (ppm)	20 ppm
France	VME (mg/m ³)	72 mg/m ³ (restrictive limit)
France	VME (ppm)	20 ppm (restrictive limit)
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	180 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	50 ppm
Germany	TRGS 903 Biological limit value	5 mg/l (Medium: urine - Time: end of shift - Parameter: 2,5-Hexandione plus 4,5-Dihydroxy-2-hexanone (after hydrolysis))
Gibraltar	Eight hours mg/m ³	72 mg/m ³
Gibraltar	Eight hours ppm	20 ppm
Greece	OEL TWA (mg/m ³)	72 mg/m ³
Greece	OEL TWA (ppm)	20 ppm
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	50 ppm
Italy	OEL TWA (mg/m ³)	72 mg/m ³
Italy	OEL TWA (ppm)	20 ppm
Latvia	OEL TWA (mg/m ³)	72 mg/m ³
Latvia	OEL TWA (ppm)	20 ppm
USA IDLH	US IDLH (ppm)	1100 ppm (10% LEL)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	180 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	50 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1800 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm
Spain	VLA-ED (mg/m ³)	72 mg/m ³ (indicative limit value)
Spain	VLA-ED (ppm)	20 ppm (indicative limit value)
Switzerland	KZGW (mg/m ³)	1440 mg/m ³
Switzerland	KZGW (ppm)	400 ppm
Switzerland	MAK (mg/m ³)	180 mg/m ³
Switzerland	MAK (ppm)	50 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	72 mg/m ³
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	144 mg/m ³
United Kingdom	WEL TWA (mg/m ³)	72 mg/m ³
United Kingdom	WEL TWA (ppm)	20 ppm
United Kingdom	WEL STEL (mg/m ³)	216 mg/m ³ (calculated)
United Kingdom	WEL STEL (ppm)	60 ppm (calculated)
Czech Republic	Expoziční limity (PEL) (mg/m ³)	70 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	72 mg/m ³

COBALT CARBONYL

Safety Data Sheet

Hexane (110-54-3)		
Denmark	Grænseværdie (langvarig) (ppm)	20 ppm
Finland	HTP-arvo (8h) (mg/m ³)	72 mg/m ³
Finland	HTP-arvo (8h) (ppm)	20 ppm
Hungary	AK-érték	72 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	72 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	20 ppm
Ireland	OEL (15 min ref) (mg/m ³)	216 mg/m ³ (calculated)
Ireland	OEL (15 min ref) (ppm)	60 ppm (calculated)
Lithuania	IPRV (mg/m ³)	72 mg/m ³
Lithuania	IPRV (ppm)	20 ppm
Malta	OEL TWA (mg/m ³)	72 mg/m ³
Malta	OEL TWA (ppm)	20 ppm
Norway	Grenseverdier (AN) (mg/m ³)	72 mg/m ³
Norway	Grenseverdier (AN) (ppm)	20 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m ³)	72 mg/m ³
Norway	Grenseverdier (Korttidsverdi) (ppm)	20 ppm
Poland	NDS (mg/m ³)	72 mg/m ³
Romania	OEL TWA (mg/m ³)	72 mg/m ³
Romania	OEL TWA (ppm)	20 ppm
Sweden	nivågränsvärde (NVG) (mg/m ³)	90 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	25 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	180 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	50 ppm
Canada (Quebec)	VEMP (mg/m ³)	176 mg/m ³
Canada (Quebec)	VEMP (ppm)	50 ppm
Australia	TWA (mg/m ³)	72 mg/m ³
Australia	TWA (ppm)	20 ppm
Portugal	OEL TWA (mg/m ³)	72 mg/m ³ (indicative limit value)
Portugal	OEL TWA (ppm)	20 ppm (indicative limit value)
Portugal	OEL chemical category (PT)	skin - potential for cutaneous exposure

8.2. Exposure controls

Appropriate engineering controls:

Glove box or sealed system under inert atmosphere is required. Provide local exhaust or general room ventilation.

Personal protective equipment:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Avoid all unnecessary exposure.

Hand protection:

Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified dust and mist (teal cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Crystals.

COBALT CARBONYL

Safety Data Sheet

Molecular mass	: 341.95 g/mol
Colour	: Orange-amber.
Odour	: No data available
Odour threshold	: No data available
Refractive index	: No additional information available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 51 - 52 °C decomposes
Freezing point	: No data available
Boiling point	: 45 °C @ 0.1 mm Hg sublimes
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable,Self-heating: may catch fire.
Vapour pressure	: < 0.1 mm Hg @ 20°C
Relative vapour density at 20 °C	: < 1
Relative density	: 1.73
% Volatiles	: < 5 %
Solubility	: Reacts with water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable when stored in the dark in sealed containers.

10.3. Possibility of hazardous reactions

Decomposes at temperatures exceeding 50°C. Material decomposes slowly in contact with moist air or with water liberating carbon monoxide.

10.4. Conditions to avoid

Heat. Sparks. Open flame.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Cobalt (Co). Carbon monoxide. cobalt oxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Inhalation:dust,mist: Fatal if inhaled.

COBALT CARBONYL (10210-68-1)	
ATE CLP (oral)	761.616 mg/kg bodyweight
ATE CLP (dust,mist)	0.051 mg/l/4h
Cobalt carbonyl (10210-68-1)	
LD50 oral rat	754 mg/kg RTECS Number: GG0300000
LD50 oral mouse	378 mg/kg
LC50 inhalation rat	165 mg/m ³ LUNGS, THORAX, OR RESPIRATION: Acute pulmonary edema
ATE CLP (oral)	754 mg/kg bodyweight
ATE CLP (gases)	100 ppmv/4h
ATE CLP (vapours)	0.5 mg/l/4h

COBALT CARBONYL

Safety Data Sheet

Cobalt carbonyl (10210-68-1)

ATE CLP (dust,mist)	0.05 mg/l/4h
---------------------	--------------

Hexane (110-54-3)

LD50 oral rat	25 g/kg
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (ppm)	48000 ppm/4h
ATE CLP (dermal)	3000 mg/kg bodyweight
ATE CLP (gases)	48000 ppmv/4h

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Suspected of causing cancer.

Cobalt carbonyl (10210-68-1)

IARC group	2B - Possibly carcinogenic to humans
------------	--------------------------------------

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Potential adverse human health effects and symptoms : While no toxicity data is available, it is reasonable to assume that the carbonyl will generate carbon monoxide which complexes with hemoglobin.
Symptoms/effects after inhalation : Fatal if inhaled. May cause irritation to the respiratory tract.
Symptoms/effects after skin contact : May cause skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact : May cause eye irritation.
Symptoms/effects after ingestion : Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life.
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Hexane (110-54-3)

LC50 fish 1	2.1 - 2.98 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
-------------	---

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : This substance may be hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

In accordance with ADR / RID / IMDG / IATA / ADN

COBALT CARBONYL

Safety Data Sheet

14.1. UN number

UN-No. (ADR)	: 3190
UN-No. (IMDG)	: 3190
UN-No. (IATA)	: 3190
UN-No. (ADN)	: 3190
UN-No. (RID)	: 3190

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: SELF-HEATING SOLID, INORGANIC, N.O.S.
Proper Shipping Name (IMDG)	: SELF-HEATING SOLID, INORGANIC, N.O.S.
Proper Shipping Name (IATA)	: Self-heating solid, inorganic, n.o.s.
Proper Shipping Name (ADN)	: SELF-HEATING SOLID, INORGANIC, N.O.S.
Proper Shipping Name (RID)	: SELF-HEATING SOLID, INORGANIC, N.O.S.
Transport document description (ADR)	: UN 3190 SELF-HEATING SOLID, INORGANIC, N.O.S. (COBALT CARBONYL), 4.2, II, (D/E)
Transport document description (IMDG)	: UN 3190 SELF-HEATING SOLID, INORGANIC, N.O.S. (COBALT CARBONYL), 4.2, II
Transport document description (IATA)	: UN 3190 Self-heating solid, inorganic, n.o.s. (COBALT CARBONYL), 4.2, II
Transport document description (ADN)	: UN 3190 SELF-HEATING SOLID, INORGANIC, N.O.S. (COBALT CARBONYL), 4.2, II
Transport document description (RID)	: UN 3190 SELF-HEATING SOLID, INORGANIC, N.O.S. (COBALT CARBONYL), 4.2, II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 4.2
Danger labels (ADR)	: 4.2



IMDG

Transport hazard class(es) (IMDG)	: 4.2
Danger labels (IMDG)	: 4.2



IATA

Transport hazard class(es) (IATA)	: 4.2
Hazard labels (IATA)	: 4.2



ADN

Transport hazard class(es) (ADN)	: 4.2
Danger labels (ADN)	: 4.2



RID

Transport hazard class(es) (RID)	: 4.2
----------------------------------	-------

COBALT CARBONYL

Safety Data Sheet

Danger labels (RID) : 4.2



14.4. Packing group

Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II

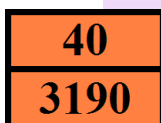
14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : S4
Special provisions (ADR) : 274
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P410, IBC06
Special packing provisions (ADR) : B3
Mixed packing provisions (ADR) : MP14
Portable tank and bulk container instructions (ADR) : T3
Portable tank and bulk container special provisions (ADR) : TP33
Tank code (ADR) : SGAN
Vehicle for tank carriage : AT
Transport category (ADR) : 2
Special provisions for carriage - Packages (ADR) : V1
Hazard identification number (Kemler No.) : 40
Orange plates :



Tunnel restriction code (ADR) : D/E
EAC code : 1Y

- Transport by sea

Special provisions (IMDG) : 274
Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P410
Special packing provisions (IMDG) : PP31
IBC packing instructions (IMDG) : IBC06
IBC special provisions (IMDG) : B2
Tank instructions (IMDG) : T3
Tank special provisions (IMDG) : TP33
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-J
Stowage category (IMDG) : C
Properties and observations (IMDG) : Liable to self-heating or spontaneous combustion.

COBALT CARBONYL

Safety Data Sheet

- Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: 467
PCA max net quantity (IATA)	: 15kg
CAO packing instructions (IATA)	: 470
CAO max net quantity (IATA)	: 50kg
Special provisions (IATA)	: A3
ERG code (IATA)	: 4L

- Inland waterway transport

Classification code (ADN)	: S4
Special provisions (ADN)	: 274
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E2
Equipment required (ADN)	: PP
Number of blue cones/lights (ADN)	: 0

- Rail transport

Classification code (RID)	: S4
Special provisions (RID)	: 274
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E2
Packing instructions (RID)	: P410, IBC06
Mixed packing provisions (RID)	: MP14
Portable tank and bulk container instructions (RID)	: T3
Portable tank and bulk container special provisions (RID)	: TP33
Tank codes for RID tanks (RID)	: SGAN
Transport category (RID)	: 2
Special provisions for carriage – Packages (RID)	: W1
Colis express (express parcels) (RID)	: CE10
Hazard identification number (RID)	: 40

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

COBALT CARBONYL is not on the REACH Candidate List

COBALT CARBONYL is not on the REACH Annex XIV List

% Volatiles : < 5 %

15.1.2. National regulations

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

COBALT CARBONYL

Safety Data Sheet

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 2	Carcinogenicity, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Repr. 2	Reproductive toxicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Self-heat. 1	Self-Heating Substances and Mixtures, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H251	Self-heating: may catch fire.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H330	Fatal if inhaled.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

SDS EU (REACH Annex II) - Custom

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

COBALT CARBONYL

Safety Data Sheet

© 2018 Gelest Inc. Morrisville, PA 19067

