

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 7.5 Revision Date 25.12.2023 Print Date 04.05.2025

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

1.1 **Product identifiers**

> Product name : HIS-Select® Cobalt Affinity Gel

Product Number : H8162 Brand Sigma

REACH No. This product is a mixture. REACH Registration Number see

section 3.

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

Identified uses Laboratory chemicals, Manufacture of substances

Uses advised against For R&D use only. Not for pharmaceutical, household or other

uses.

1.3

1.4 **Emergency telephone**

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Flammable liquids, (Category 3) H226: Flammable liquid and vapor.

Eye irritation, (Category 2) H319: Causes serious eye irritation.

Respiratory sensitization, H334: May cause allergy or asthma

symptoms or breathing difficulties if (Category 1)

inhaled.

H317: May cause an allergic skin reaction. Skin sensitization, (Category 1)

Sigma- H8162 Page 1 of 16 Germ cell mutagenicity, (Category 2)

Carcinogenicity, (Category 1B)

H350: May cause cancer.

Reproductive toxicity, (Category 1B)

H360F: May damage fertility.

Short-term (acute) aquatic hazard, (Category 1)

H400: Very toxic to aquatic life.

Long-term (chronic) aquatic H410: Very toxic to aquatic life with long hazard, (Category 1) lasting effects.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal Word	Danger
Hazard Statements H226 H317 H319 H334	Flammable liquid and vapor. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties
H341 H350 H360F H410	if inhaled. Suspected of causing genetic defects. May cause cancer. May damage fertility. Very toxic to aquatic life with long lasting effects.
Precautionary Statements	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
Supplemental Hazard Statements	none
	Restricted to professional users.

Reduced Labeling (<= 125 ml)

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Signal Word Danger

Hazard Statements

H334 May cause allergy or asthma symptoms or breathing difficulties

if inhaled.

H317 May cause an allergic skin reaction. H341 Suspected of causing genetic defects.

H350 May cause cancer. H360F May damage fertility.

Precautionary Statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face

protection.

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

Supplemental Hazard

Statements

none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

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

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Component		Classification	Concentration	
Cobalt(II) sulfate heptahydrate Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)				
CAS-No.	10026-24-1	Acute Tox. 4; Eye Irrit. 2;	>= 50 - < 70	
EC-No. Index-No.	233-334-2 027-005-00-0	Resp. Sens. 1; Skin Sens. 1; Muta. 2; Carc. 1B;	%	
Registration number	01-2119517426-41- XXXX	Repr. 1B; Aquatic Acute 1; Aquatic Chronic 1; H302, H319, H334, H317, H341, H350i, H360F, H400, H410 Concentration limits: >= 0,01 %: Carc. 1B, H350i; M-Factor - Aquatic Acute:		

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		10 - Aquatic Chronic: 10	
ethanol			
CAS-No. EC-No. Index-No. Registration number	64-17-5 200-578-6 603-002-00-5 01-2119457610-43- XXXX	Flam. Liq. 2; Eye Irrit. 2; H225, H319 Concentration limits: >= 50 %: Eye Irrit. 2A, H319;	>= 10 - < 20 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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5.2 Special hazards arising from the substance or mixture

Carbon oxides

Sulfur oxides

Cobalt/cobalt oxides

Not combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

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Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage stabilityRecommended storage temperature

2 - 8 °C

Storage class

Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

required

Body Protection

Flame retardant antistatic protective clothing.

Respiratory protection

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type ABEK

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Physical state liquid

b) Color No data available

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c) Odor No data available Melting No data available d) point/freezing point Initial boiling point No data available and boiling range Flammability (solid, No data available f) gas) g) Upper/lower No data available flammability or explosive limits h) Flash point 48 °C - closed cupNot applicable Autoignition Not applicable temperature No data available Decomposition j) temperature No data available k) рΗ Viscosity, kinematic: No data available Viscosity I) Viscosity, dynamic: No data available m) Water solubility No data available No data available n) Partition coefficient: n-octanol/water No data available o) Vapor pressure No data available p) Density Relative density No data available Relative vapor No data available density

s) Explosive properties Not classified as explosive.

No data available

t) Oxidizing properties none

9.2 Other safety information

characteristics

No data available

r) Particle

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

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10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heating.

10.5 Incompatible materials

Oxidizing agents, Alkali metals, Strong oxidizing agents, Ammonia, Peroxides

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity

Acute toxicity estimate Oral - > 2.000 mg/kg

(Calculation method)

Symptoms: Possible symptoms:, mucosal irritations

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

Remarks: Mixture causes serious eye irritation.

Respiratory or skin sensitization

Mixture may cause allergy or asthma symptoms or breathing difficulties if inhaled. Mixture may cause an allergic skin reaction.

Germ cell mutagenicity

Evidence of genetic defects.

Evidence of genetic defects.

Carcinogenicity

Possible carcinogen.

Possible carcinogen.

Reproductive toxicity

May impair fertility.

May impair fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

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11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment The substance/mixture does not contain

components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Central nervous system depression, Nausea, Dizziness, narcosis, Damage to the heart., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

Components

Cobalt(II) sulfate heptahydrate

Acute toxicity

LD50 Oral - Rat - male and female - 1.330 mg/kg

(OECD Test Guideline 401) Remarks: (anhydrous substance)

Acute toxicity estimate Oral - 1.330 mg/kg

(Calculation method)

Inhalation: No data available Dermal: No data available

Skin corrosion/irritation

Skin - In vitro study

Result: No skin irritation - 15 min (OECD Test Guideline 439) Remarks: (anhydrous substance)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Eye irritation (OECD Test Guideline 405) Remarks: (anhydrous substance)

Respiratory or skin sensitization

Patch test: - Guinea pig

Result: positive

(OECD Test Guideline 406) Remarks: (anhydrous substance)

Germ cell mutagenicity

Suspected of causing genetic defects.

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Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Result: negative

Remarks: (anhydrous substance)

Carcinogenicity

May cause cancer by inhalation.

Reproductive toxicity

May damage fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Aspiration hazard

No data available

ethanol

Acute toxicity

LD50 Oral - Rat - male and female - 10.470 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 124,7 mg/l - vapor

(OECD Test Guideline 403) Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 24 h (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation.

(OECD Test Guideline 405)

Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Methanol

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: negative

Method: OECD Test Guideline 478

Species: Mouse - male

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Result: Positive results were obtained in some in vivo tests.

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Aspiration hazard

No data available

SECTION 12: Ecological information

12.1 Toxicity

Mixture

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components

considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

Components

Cobalt(II) sulfate heptahydrate

Toxicity to fish semi-static test LC50 - Pimephales promelas (fathead minnow)

- 1,866 mg/l - 96 h

(US-EPA)

Remarks: (anhydrous substance)

Toxicity to daphnia static test LC50 - Ceriodaphnia dubia (water flea) - 0,39 mg/l -

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and other aquatic 48 h invertebrates (US-EPA)

Remarks: (anhydrous substance)

Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata - 0,095 mg/l

- 72 h

(OECD Test Guideline 201) Remarks: (anhydrous substance)

Toxicity to bacteria static test EC50 - activated sludge - 120 mg/l - 30 min

(OECD Test Guideline 209) Remarks: (anhydrous substance)

The value is given in analogy to the following substances:

Cobalt(II) chloride

Toxicity to semi-static test NOEC - Pimephales promelas (fathead minnow)

fish(Chronic toxicity) - 0,909 mg/l - 7 d

(US-EPA)

Remarks: (anhydrous substance)

Toxicity to daphnia semi-static test NOEC - Ceriodaphnia dubia (water flea) - 0,003

and other aquatic mg/l - 7 d invertebrates(Chronic (US-EPA)

toxicity) Remarks: (anhydrous substance)

ethanol

Toxicity to fish flow-through test LC50 - Pimephales promelas (fathead

minnow) - 15.300 mg/l - 96 h

(US-EPA)

Toxicity to daphnia static test LC50 - Ceriodaphnia dubia (water flea) - 5.012 mg/l

and other aquatic - 48 h

invertebrates Remarks: (ECHA)

Toxicity to algae static test ErC50 - Chlorella vulgaris (Fresh water algae) - 275

mg/l - 72 h

(OECD Test Guideline 201)

Toxicity to bacteria static test IC50 - activated sludge - > 1.000 mg/l - 3 h

(OECD Test Guideline 209)

Toxicity to semi-static test NOEC - Danio rerio (zebra fish) - 250 mg/l -

fish(Chronic toxicity) 120 h

Remarks: (ECHA)

Toxicity to daphnia semi-static test NOEC - Daphnia magna (Water flea) - 9,6 mg/l

and other aquatic - 9 d

invertebrates(Chronic Remarks: (ECHA)

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1170 IMDG: 1170 IATA: 1170

14.2 UN proper shipping name

ADR/RID: ETHANOL SOLUTION IMDG: ETHANOL SOLUTION IATA: Ethanol solution

14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4 Packaging group

ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

Tunnel restriction code : (D/E)

Further information : No data available

SECTION 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

: Cobalt(II) sulfate heptahydrate

Authorisations and/or restrictions on use

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

REACH - Restrictions on the manufacture, : Cobalt(II) sulfate heptahydrate placing on the market and use of certain dangerous substances, mixtures and articles

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(Annex XVII)

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P5c FLAMMABLE LIQUIDS

E1 ENVIRONMENTAL HAZARDS

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements

H225	Highly flammable liquid and vapor.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360F	May damage fertility.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

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Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM -American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS -Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Classification of the	Classification procedure:	
Flam. Liq.3	H226	Based on product data or assessment
Eye Irrit.2	H319	Calculation method
Resp. Sens.1	H334	Calculation method
Skin Sens.1	H317	Calculation method
Muta.2	H341	Calculation method
Carc.1B	H350	Calculation method
Repr.1B	H360F	Calculation method
Aquatic Acute1	H400	Calculation method
Aquatic Chronic1	H410	Calculation method

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Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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