

Sodium Sulfide yellow flake

Version number: 1.0

SECTION 1: Identification

1.1 Product identifier

Identification of the substance	sodium sulfide
Trade name	<u>Sodium Sulfide yellow flake</u>
CAS number	27610-45-3

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

Relevant identified uses	Chemicals for various applications Additive for paper production Tannery Textile auxiliary Mining chemical
Uses advised against	Do not use for squirting or spraying Do not use for products which come into direct contact with the skin

1.3 Details of the supplier of the safety data sheet

Valudor Products, LLC 179 Calle Magdalena Suite 100 Encinitas, California CA 92024 United States	Telephone: +1 (760) 635 8500 e-mail: info@valudor.com Website: www.valudor.com
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1.4 Emergency telephone number

Emergency information	800-535-5053 (Infotrac)
As above or nearest toxicological information center.	

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
A.1O	acute toxicity (oral)	3	Acute Tox. 3	H301
A.1D	acute toxicity (dermal)	3	Acute Tox. 3	H311
A.2	skin corrosion/irritation	1	Skin Corr. 1	H314

Sodium Sulfide yellow flake

Version number: 1.0

Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
B.16	substance or mixture corrosive to metals	1	Met. Corr. 1	H290

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Signal word danger

Pictograms

GHS05, GHS06



Hazard statements

H290 May be corrosive to metals.
H301+H311 Toxic if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.

Precautionary statements

P234 Keep only in original container.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P352 If on skin: Wash with plenty of water/...
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.
P362 Take off contaminated clothing and wash before reuse.
P390 Absorb spillage to prevent material damage.
P405 Store locked up.
P406 Store in corrosive resistant container with a resistant inner liner.
P501 Dispose of contents/container to an authorized waste treatment facility.

Sodium Sulfide yellow flake

Version number: 1.0

2.3 Other hazards

Hazards not otherwise classified

Contact with acids liberates toxic gas.
Corrosive to the respiratory tract.

Results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	sodium sulfide
Identifiers	
CAS No	27610-45-3
Molecular formula	Na ₂ S x H ₂ O
Purity	≥ 60 % Na ₂ S

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Self-protection of the first aider.
Remove victim out of the danger area.
Take off immediately all contaminated clothing.
Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.
In all cases of doubt, or when symptoms persist, seek medical advice.
In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

Provide fresh air.
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.
In case of respiratory tract irritation, consult a physician.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
Wash with plenty of soap and water.
Call a physician immediately. Causes poorly healing wounds.
Wash contaminated clothing before reuse.

Following eye contact

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Sodium Sulfide yellow flake

Version number: 1.0

Rinse mouth immediately and drink plenty of water.

Do NOT induce vomiting.

Call a physician in any case.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

Toxic in contact with skin and if swallowed.

Causes severe skin burns and eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

foam, fire extinguishing powder

Unsuitable extinguishing media

water, carbon dioxide (CO₂)

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Substance or mixture corrosive to metals.

Hazardous combustion products

sulfur oxides (SO_x)

5.3 Advice for firefighters

Non-combustible.

Keep containers cool with water spray.

In case of fire and/or explosion do not breathe fumes.

Coordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

chemical protection suit, wear self-contained breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Control of dust.

Do not breathe dust/fume/gas/mist/vapors/spray.

Do not get in eyes, on skin, or on clothing.

Sodium Sulfide yellow flake

Version number: 1.0

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

Warning and evacuating people in the neighborhood.

6.2 Environmental precautions

Knock down dust with water spray.

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

If substance has entered a water course or sewer, inform the responsible authority.

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

Collect spillage.

Appropriate containment techniques

Neutralization techniques.

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

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Handle and open container with care.

Removal of dust deposits.

Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room.

Heating may cause a fire or explosion.

Handling of incompatible substances or mixtures

Do not mix with acids.

Do not mix with oxidizer

Measures to protect the environment

Avoid release to the environment.

Sodium Sulfide yellow flake

Version number: 1.0

Do not empty into drains; dispose of this material and its container at hazardous or special waste collection point.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.

Remove contaminated clothing and protective equipment before entering eating areas.

Do not breathe dust/fume/gas/mist/vapors/spray.

Do not get in eyes, on skin, or on clothing.

Wash thoroughly after handling.

Preventive skin protection (barrier creams/ointments) is recommended.

7.2 Conditions for safe storage, including any incompatibilities

Corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

Flammability hazards

None.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat, humidity

Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

Ventilation requirements

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Keep container tightly closed and in a well-ventilated place.

Keep in a cool place.

Keep container dry.

Packaging compatibilities

Only packagings which are approved (e.g. acc. to DOT) may be used.

Unsuitable materials: Steel. Aluminum.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

The following constituents are the only constituents of the product which have a PEL, a TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Sodium Sulfide yellow flake

Version number: 1.0

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Notation	Source
US	hydrogen sulfide	7783-06-4	PEL (CA)	10	14	15	21	proc	Cal/OSHA PEL
US	hydrogen sulfide	7783-06-4	REL	-	-	-	-	proc	NIOSH REL
US	hydrogen sulfide	7783-06-4	TLV®	1	-	5	-	proc	ACGIH® 2024
US	hydrogen sulfide	7783-06-4	PEL	-	-	50 (10 min)	-	proc	29 CFR 1910.1000

Notation

proc substances released during the process

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

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Hand protection

Protective gloves		
Material	Material thickness	Breakthrough times of the glove material
NR: natural rubber, latex	≥ 0,5 mm	>480 minutes (permeation: level 6)
NBR: acrylonitrile-butadiene rubber	≥ 0,5 mm	>480 minutes (permeation: level 6)
PVC: polyvinyl chloride	≥ 0,5 mm	>480 minutes (permeation: level 6)

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

Body protection

Protective clothing for use against solid particulates.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Particle filter device (DIN EN 143).

Sodium Sulfide yellow flake

Version number: 1.0

Environmental exposure controls

Use appropriate container to avoid environmental contamination.
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	solid (flakes)
Color	yellow
Odor	Like rotten eggs (mercaptans)
Odor threshold	not determined
Other safety parameters	
pH (value)	12.5 (in aqueous solution: 180 g/l, 20 °C)
Melting point/freezing point	>600 °C
Boiling point or initial boiling point and boiling range	not determined
Flash point	not applicable
Evaporation rate	not determined
Flammability (solid, gas)	non-combustible
Explosive limits	not determined
Explosion limits of dust clouds	not determined
Vapor pressure	not determined
Density and/or relative density	
Density	1.64 g/cm ³
Relative density	1.64 at 21.1 °C (water = 1) (OECD Guideline 104)
Solubility(ies)	
Water solubility	178 g/l at 20 °C
Partition coefficient	
n-octanol/water (log KOW)	not relevant (inorganic)
Auto-ignition temperature	not determined
Decomposition temperature	not relevant

Sodium Sulfide yellow flake

Version number: 1.0

Viscosity	not relevant (solid)
Explosive properties	none
Oxidizing properties	none
Information for relevant hazard classes according to GHS	there is no additional information

9.2 Other information

Temperature class (USA, acc. to NEC 500)	T5 (maximum permissible surface temperature on the equipment: 100°C)
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SECTION 10: Stability and reactivity

10.1 Reactivity

It's a reactive substance.
Substance or mixture corrosive to metals.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

Spontaneous ignition possible through auto-oxidation of cloths soaked in the product.
Contact with acids liberates toxic gas.

10.4 Conditions to avoid

Keep away from heat.
UV-radiation/sunlight.
Protect from moisture.

10.5 Incompatible materials

acids, oxidizers, metal, carbon dioxide (CO₂)

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.
Sulfur dioxide (SO₂).
Hydrogen sulfide (H₂S).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgment (weight of evidence determination), 1272/2008/EC, Annex VI.

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Sodium Sulfide yellow flake

Version number: 1.0

Acute toxicity

Toxic if swallowed.

Toxic in contact with skin.

Exposure route	Endpoint	Value	Species
oral	LD50	246 mg/kg	rat

Skin corrosion/irritation

Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Skin sensitization

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitization

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

IARC Monographs

not listed

National Toxicology Program (United States)

not listed

OSHA Carcinogens

Not listed.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Other information

Corrosive to the respiratory tract.

Sodium Sulfide yellow flake

Version number: 1.0

11.2 Other information

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

Based on available data, the classification criteria are not met.

Endpoint	Exposure time	Value	Species	Method	Source
LC50	96 h	7,960 mg/l	fathead minnow (Pimephales promelas)	-	ECHA
LC50	48 h	3,080 mg/l	Ceriodaphnia dubia (water flea)	-	ECHA

Aquatic toxicity (chronic)

Based on available data, the classification criteria are not met.

Endpoint	Exposure time	Value	Species	Method	Source
EC50	4 h	0.104 mg/l	algae (Sceletonema costatum)	OECD Guideline 201	ECHA
LOEC	4 h	1.6 mg/l	algae (Sceletonema costatum)	OECD Guideline 201	ECHA

12.2 Persistence and degradability

Biodegradation

The study does not need to be conducted because the substance is inorganic.

Persistence

The study does not need to be conducted because the substance is inorganic.

12.3 Bioaccumulative potential

n-octanol/water (log KOW) not relevant
(inorganic)

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

Data are not available.

Harmful effect on fish, plankton and other organisms due to pH shift possible.

Remarks

Keep away from drains, surface and ground water.

Sodium Sulfide yellow flake

Version number: 1.0

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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/packages

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number

DOT	UN1849
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IMDG-Code	UN1849
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ICAO-TI	UN1849
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14.2 UN proper shipping name

DOT	Sodium sulphide, hydrated
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IMDG-Code	SODIUM SULPHIDE, HYDRATED
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ICAO-TI	Sodium sulphide, hydrated
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14.3 Transport hazard class(es)

DOT	8
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IMDG-Code	8
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ICAO-TI	8
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14.4 Packing group

DOT	II
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IMDG-Code	II
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ICAO-TI	II
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14.5 Environmental hazards	hazardous to the aquatic environment
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14.6 Special precautions for user	-
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14.7 Transport in bulk according to IMO instruments	-
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Sodium Sulfide yellow flake

Version number: 1.0

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) Additional information

Particulars in the shipper's declaration	UN1849, Sodium sulphide, hydrated, 8, II, environmentally hazardous
Danger label(s)	8, fish and tree
	
Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	IB8, IP2, IP4, T3, TP33
ERG No	153

International Maritime Dangerous Goods Code (IMDG) Additional information

Marine pollutant	yes (hazardous to the aquatic environment)
Danger label(s)	8, fish and tree
	
Special provisions (SP)	-
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 kg
EmS	F-A, S-B
Stowage category	A
Segregation group	18 - Alkalis.

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

Environmental hazards	yes (hazardous to the aquatic environment)
Danger label(s)	8
	
Excepted quantities (EQ)	E2
Limited quantities (LQ)	5 kg

Sodium Sulfide yellow flake

Version number: 1.0

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Superfund Amendment and Reauthorization Act (SARA TITLE III)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

Not listed

Specific Toxic Chemical Listings (EPCRA Section 313)

Not listed

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Not listed

Clean Air Act

Not listed

Right to Know Hazardous Substance List

Toxic or Hazardous Substance List (MA-TURA)

Not listed

Hazardous Substances List (MN-ERTK)

Not listed

Hazardous Substance List (NJ-RTK)

Name of substance	Name acc. to inventory	CAS No	Remarks	Classifications	Listed in	Substance number	DOT number
sodium sulfide	sodium sulfide	1313-82-2	-	CO R1.	3 15 17	1728	1385

Legend

- 15 "Fire Protection Guide to Hazardous Materials," N FPA 49 (Hazardous Chemicals Data), NFPA 325 (Guide to Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids), and NFPA 704 (Standard System for the Identification of the Hazards of Materials for Emergency Response), National Fire Protection Association (NFPA), 2001.
- 17 "2008 Emergency Response Guidebook," Research and Special Programs Administration, U.S. Department of Transportation, 2008.
- 3 Office of Hazardous Materials Safety, Research and Special Programs Administration, U.S. Department of Transportation, 49 CFR 172.101-Hazardous Materials Table, October 1, 2008.
- CO Corrosive
- R1 Reactive - First Degree

Sodium Sulfide yellow flake

Version number: 1.0

Hazardous Substance List (Chapter 323) (PA-RTK)

Not listed

Hazardous Substance List (RI-RTK)

Not listed

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

Not listed

Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

Not listed

SECTION 16: Other information, including date of preparation or last revision

Date of preparation: 2025-06-05

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
1272/2008/EC, Annex VI	Harmonised classification and labelling for certain hazardous substances
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH® 2024	From ACGIH®, 2024 TLVs® and BEIs® Book. Copyright 2024. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DOT	Department of Transportation (USA)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EmS	Emergency Schedule
ERG No	Emergency Response Guidebook - Number
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC	International Agency for Research on Cancer
IARC Monographs	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)

Sodium Sulfide yellow flake

Version number: 1.0

Abbr.	Descriptions of used abbreviations
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
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LOEC	Lowest Observed Effect Concentration
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
ppm	Parts per million
STEL	Short-term exposure limit
TLV®	Threshold Limit Values
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT).

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
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Responsible for the safety data sheet

Chemical Regulatory Compliance Company
Jasper, GA
USA

Telephone: +1 (630) 410-1660
e-Mail: GHS@crc-us.com
Website: www.crc-us.com

Sodium Sulfide yellow flake

Version number: 1.0

Disclaimer

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