



Safety Data Sheet (SDS)

North American (U.S. and Canada)

Revision date: 2018-10-31

SECTION 1: Identification

Product identifiers:

Product trade name: GOOD-RITE* NASH
Company product number: NASH
Other means of identification: Not Available

Recommended use of the chemical and restrictions on use:

Uses: Sodium hydrosulfide in water
Restrictions on use: None identified

Details of the supplier:

Manufacturer/Supplier: Emerald Performance Materials, LLC
1499 SE Tech Center Place, Suite 300
Vancouver, WA 98683
United States
Telephone: +1-360-954-7100
FAX: +1-360-954-7201
Email: product.compliance@emeraldmaterials.com

For further information about this SDS:

Emergency telephone number:

ChemTel (24 hours): 1-800-255-3924 (USA); +1-813-248-0585 (outside USA);
1-300-954-583 (Australia); 000-800-100-4086 (India).

SECTION 2: Hazard(s) identification

Information in accordance with U.S. 29 CFR 1910.1200 (Hazcom 2012) and Canada Hazardous Products Regulations (WHMIS 2015):

Classification of the product:

Corrosive to Metals, category 1
Acute Toxicity, Oral, category 3
Skin Corrosion, category 1B

Label elements:

Hazard pictogram(s):



Signal word:

Danger

Hazard statements:

H290 May be corrosive to metals.
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.

Precautionary statements:

P234 Keep only in original packaging.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash skin 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+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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 or doctor/physician.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P405 Store locked up.
P406 Store in a corrosion-resistant container with a resistant inner liner.
P501 Dispose of contents/container in accordance with local, regional and international regulations.

Supplemental information: Hazardous to the aquatic environment - Acute Category 1, Very toxic to aquatic life.

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Annex III. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

Hazards not otherwise classified:

Physical hazards not otherwise classified: Acid or heating will cause toxic hydrogen sulfide gas to evolve.

Health hazards not otherwise classified: No Additional Information

See Section 11 for toxicological information.

SECTION 3: Composition/information on ingredients

Mixture:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Weight%*</u>
0016721-80-5	Sodium Hydrosulfide	30-<60

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits. * Exact percentage values for components are proprietary (trade secret) in accordance with 29 CFR 1910.1200(i) and Hazardous Products Regulations 4.4.1.

SECTION 4: First-aid measures

Description of first aid measures:

General: If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

Eye contact: Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Get medical attention immediately.

Skin contact: Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. Get medical attention immediately.

Inhalation: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

Protection of first aid responders: Wear proper personal protective clothing and equipment.

Most important symptoms and effects, both acute and delayed: Dizziness, Drowsiness, Headache, Irritation, Nausea, Shortness of breath. Preexisting sensitization, skin and/or respiratory disorders or diseases may be aggravated. See section 11 for additional information.

Indication of any immediate medical attention and special treatment needed, if necessary: Symptoms may be delayed. Symptomatic and supportive therapy as needed. Following severe exposure, observe patient for at least 24 to 48 hours.

SECTION 5: Fire-fighting measures

NFPA flammability class: N/A

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Extinguishing media:

Suitable: Carbon dioxide, dry chemical, water fog.

Unsuitable: None known.

Special hazards arising from the chemical:

Unusual fire/explosion hazards: Run off water from firefighting may have corrosive effects. Do not flush spill to sewer. Runoff to sewer may cause a fire or explosion hazard. Due to potential hydrogen sulfide evolution, hydrogen sulfide vapors may explode if ignited in an enclosed area. Run off to sewer may cause a fire or explosion hazard. Contact with all acids or excessive heat will liberate poisonous, flammable hydrogen sulfide gas.

Hazardous combustion products: Under fire conditions, decomposes to give off toxic and flammable hydrogen sulfide gas. Once liberated, hydrogen sulfide will burn and has an explosive range of 4.3-45% in air. See section 10 (Hazardous decomposition products) for additional information.

Special protective equipment and precautions for fire-fighters: Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Personal Protective Equipment must be worn.

Environmental precautions: Do not flush liquid into public sewer, water systems or surface waters. If spill is large, be prepared to isolate the hazard area.

Methods and materials for containment and cleaning up: Prevent entry into sewers and waterways. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Treat as caustic material. Wear proper personal protective clothing and equipment. Deny access to the spill area to persons who are not involved in the cleanup and/or who have not been properly trained in spill management. Place into labeled, closed container; store in safe location to await disposal. Wash the spill area to remove final traces. Personal protective equipment and clothing must be utilized by persons performing this work.

SECTION 7: Handling and storage

Precautions for safe handling: As with any chemical product, use good laboratory/workplace procedures. Do not get in eyes, on skin or clothing. Do not breathe dust, vapor, aerosol, mist or gas. Do not ingest, taste, or swallow. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area. Use spark-proof tools and equipment.

Conditions for safe storage, including any incompatibilities: Store cool and dry, under well-ventilated conditions. Store flammable liquids away from this product. Store this material away from incompatible substances (see section 10). Do not allow product to freeze. Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Avoid storage in aluminum or zinc containers. Do not store near acid. Do not reuse empty container without commercial cleaning or reconditioning. Empty container contains residual product which may exhibit hazards of product.

SECTION 8: Exposure controls / personal protection

Control parameters:

Occupational exposure limits (OEL):

<u>Chemical Name</u>	<u>ACGIH - TWA/Ceiling</u>	<u>ACGIH - STEL</u>		
Sodium Hydrosulfide	N/E			
<u>Chemical Name</u>	<u>OSHA - PEL</u>	<u>OSHA - STEL</u>	<u>OSHA - Ceiling</u>	<u>AIHA - WEEL</u>
Sodium Hydrosulfide	N/E	N/E	N/E	N/E

N/E=Not established (no exposure limits established for the listed substances for listed country/region/organization).

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HYDROGEN SULFIDE GAS (decomposition product): ACGIH Threshold Limit Values: 10 ppm TWA; 15 ppm STEL.
HYDROGEN SULFIDE GAS (decomposition product): NIOSH IDLH (Immediately Dangerous to Life of Health): 100 ppm.
OSHA Permissible Exposure Limits: 20 ppm Ceiling. OSHA has established an Acceptable Maximum Peaks above the Ceiling Concentrations for an 8-hour shift of 50 ppm Peak (10 minutes in any 8 hours).

Exposure controls:

Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. (Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation: American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Drive, Cincinnati, OH, 45240-1634, USA.) (<http://www.acgih.org/home.htm>).

Individual protection measures, such as personal protective equipment (PPE):

Eye/face protection: Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection: Wear chemical resistant (impervious) gloves. Wear chemical resistant protective clothing. Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. Wear an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume or vapor exceed the applicable exposure limit(s) of any chemical substance listed in this SDS. Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR).

Further information: Eyewash fountains and safety showers are recommended in the work area.

SECTION 9: Physical and chemical properties

Form:	Liquid	pH:	11.5-12.5
Appearance:	Yellow to dark green	Relative density:	1.2 - 1.3
Odor:	Hydrogen sulfide	Partition coefficient (n-octanol/water):	Not Available
Odor threshold:	Not Available	% Volatile by weight:	Water: 55 - 60%
Solubility in water:	Soluble	VOC:	Not Available
Evaporation rate:	Same as water	Boiling point °C:	123 °C
Vapor pressure:	17mm Hg @ 68 °F (20 °C)	Boiling point °F:	253 °F
Vapor density:	~1.17 (Air=1.0)	Flash point:	Not Applicable
Viscosity:	Not Available	Auto-ignition temperature:	Not Available
Melting point/Freezing point:	Not Available	Flammability (solid, gas):	Not Applicable (liquid)
Oxidizing properties:	Not oxidizing	Flammability or explosive limits:	LFL/LEL Not Available UFL/UEL Not Available
Explosive properties:	Not explosive		
Decomposition temperature:	Not Available		

Other information: Amounts specified are typical and do not represent a specification.

SECTION 10: Stability and reactivity

Reactivity: Upon contact with acids, hydrogen sulfide will evolve.

Chemical stability: This product is stable.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

Conditions to avoid: Do not freeze. Overheating.

Incompatible materials: Contact with metals such as brass, tin, zinc, aluminum, lead, and copper may produce hydrogen gas. Avoid strong acids and oxidizing agents.

Hazardous decomposition products: Oxides of sulfur. Hydrogen sulfide gas.

SECTION 11: Toxicological information

Information on likely routes of exposure:

General: Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure. Hydrogen sulfide gas, a decomposition product, is potentially lethal when inhaled or absorbed through the skin. Very low concentrations of hydrogen sulfide are detectable by the presence of "rotten egg" odor but the gas will very quickly desensitize the sense of smell. Inhalation of hydrogen sulfide may cause irritation, headaches, dizziness, pulmonary edema, nausea, vomiting, loss of consciousness and death.

Eyes: Causes serious eye damage.

Skin: Causes skin burns.

Inhalation: Exposure to vapors or mists may cause severe irritation and burns of the nose, throat and respiratory tract.

Ingestion: Toxic if swallowed. Ingestion may cause severe irritation and burns of the mouth, throat and digestive tract.

Symptoms/effects, acute and delayed: Dizziness, Drowsiness, Headache, Irritation, Nausea, Shortness of breath

Acute toxicity information: Toxic if swallowed (Category 3). ATEmix (oral): >50-300 mg/kg.

<u>Chemical Name</u>	<u>Inhalation LC50</u>	<u>Species</u>	<u>Oral LD50</u>	<u>Species</u>	<u>Dermal LD50</u>	<u>Species</u>
Sodium Hydrosulfide	N/E	N/E	>100-215 mg/kg (70%)	Rat/ adult	>200 mg/kg	Rabbit/ adult

Skin corrosion/irritation: Causes severe skin burns (Category 1B).

<u>Chemical Name</u>	<u>Skin Irritation</u>	<u>Species</u>
Sodium Hydrosulfide	Corrosive	N/E

Serious eye damage/irritation: Causes serious eye damage (Category 1).

<u>Chemical Name</u>	<u>Eye Irritation</u>	<u>Species</u>
Sodium Hydrosulfide	Corrosive	N/E

Respiratory or skin sensitization: Not classified.

<u>Chemical Name</u>	<u>Skin sensitisation</u>	<u>Species</u>
Sodium Hydrosulfide	N/E	N/E

Carcinogenicity: Not classified (no relevant information found).

Carcinogenic status: The components of this mixture are not known to be listed or regulated by IARC (Group 1 or 2), NTP, OSHA or ACGIH.

Germ cell mutagenicity: Not classified (no relevant information found).

Reproductive toxicity: Not classified (no relevant information found).

Specific target organ toxicity (STOT) - single exposure: Not classified.

Specific target organ toxicity (STOT) - repeated exposure: Not classified (no relevant information found).

Aspiration hazard: Not classified (based on available data, the classification criteria are not met).

Other toxicity information: No additional information available.

SECTION 12: Ecological information

Ecotoxicity: No ecological testing has been conducted on this product. HYDROGEN SULFIDE (decomposition product): Very toxic to aquatic organisms.

<u>Chemical Name</u>	<u>Species</u>	<u>Acute</u>	<u>Acute</u>	<u>Chronic</u>
Sodium Hydrosulfide	Fish	LC50 7960 mg/L (96 hours) (similar materials)	N/E	N/E
Sodium Hydrosulfide	Invertebrates	EC50 3080 mg/L (48 hours) (similar materials)	N/E	N/E
Sodium Hydrosulfide	Algae	EC50 0.104 mg/L (H2S) (4 hours) (similar materials)	N/E	NOEC 0.041 mg/L (H2S)(4 hours) (similar materials)

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Persistence and degradability:

Chemical Name
Sodium Hydrosulfide

Biodegradation
Not applicable (inorganic)

Bioaccumulative potential:

Chemical Name
Sodium Hydrosulfide

Bioconcentration Factor (BCF)
0.03-0.85 L/kg (similar materials, weight of evidence)

Log Kow
N/E

Mobility in soil:

Chemical Name
Sodium Hydrosulfide

Mobility in soil (Koc/Kow)
N/E

Other adverse effects: No additional information available.

SECTION 13: Disposal considerations

HAZARDOUS WASTE: Dispose of waste (incinerate) in a RCRA permitted hazardous waste disposal facility. Corrosive: EPA Hazardous Waste No. D002. Federal Resource Conservation and Recovery Act (RCRA), 40CFR261.22. Federal, state and local regulations where the waste material is generated, treated, and/or disposed of must be examined to verify the appropriate waste classification.

See Section 8 for recommendations on the use of personal protective equipment.

SECTION 14: Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

UN number: UN2922

UN proper shipping name:

Corrosive liquid, toxic, n.o.s. (contains Sodium hydrosulfide solution)

Transport hazard class(es):

U.S. DOT hazard class: 8 (6.1)

Canada TDG hazard class: 8 (6.1)

Europe ADR/RID hazard class: 8 (6.1)

IMDG Code (ocean) hazard class: 8 (6.1)

ICAO/IATA (air) hazard class: 8 (6.1)

A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

Packing group: II

Environmental hazards:

Marine pollutant: Marine Pollutant (IMDG code 2.9.3).

Hazardous substance (USA): A shipment in a single package greater than 11,300 lbs. may exceed the reportable quantity (RQ) for one or more components.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:

Chemical Name
Sodium Hydrosulfide

Category
Category Z (<=45% solution)

Special precautions for user: Not Applicable

SECTION 15: Regulatory information

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

U.S. federal and state regulations/legislation:

This SDS has been prepared in accordance with the hazard criteria of the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Reportable Quantity (RQ):

<u>Chemical Name</u>	<u>RQ (lbs)</u>	<u>RQ (kg)</u>
Sodium Hydrosulfide	5,000.00	2,272.73

U.S. Superfund Amendments and Reauthorization Act (SARA) - SARA Section 313:

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372:

None known

U.S. TSCA Section 12(b) Export Notification:

This product is not subject to TSCA 12(b) reporting requirements.

California Proposition 65:

The following ingredient(s) present in the product is [are] known to the State of California to cause cancer:

None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

The following ingredient(s) present in the product is [are] known to the State of California to cause birth defects or other reproductive harm:

None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

Notes: No additional information

Canada regulations/legislation:

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

Notes: No additional information

Chemical inventories:

<u>Regulation</u>	<u>Status</u>
Australian Inventory of Chemical Substances (AICS):	Y
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	N
China Inventory of Existing Chemical Substances (IECSC):	Y
European EC Inventory (EINECS, ELINCS, NLP):	Y
Japan Existing and New Chemical Substances (ENCS):	Y
Japan Industrial Safety and Health Law (ISHL):	Y
Korean Existing and Evaluated Chemical Substances (KECL):	Y
New Zealand Inventory of Chemicals (NZIoC):	Y
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Y
Taiwan Inventory of Existing Chemicals:	Y
U.S. Toxic Substances Control Act (TSCA):	Y

Europe REACH (EC) 1907/2006: One or more applicable components of this mixture are not registered. Please contact your sales representative for further information regarding REACH compliance. REACH is only relevant to substances either manufactured or imported into the EU. REACH information regarding this product is provided for informational purposes only. Each Legal Entity may have differing REACH obligations, depending on their place in the supply chain. For material manufactured outside of the EU, the importer of record must understand and meet their specific obligations under the regulation.

SECTION 16: Other information

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HMIS (Hazardous Materials Identification System) Ratings:

Health: 3 **Flammability:** 1 **Physical hazard:** 1 **Personal Protection:** X

NFPA (National Fire Protection Association) Ratings:

Health: 3 **Flammability:** 1 **Instability:** 1

Key: 0=Insignificant; 1=Slight; 2=Moderate; 3=High; 4=Extreme. An asterisk appearing after the HMIS Health numerical rating denotes a chronic hazard.

Hazardous Materials Identification System (HMIS), National Paint and Coating Association, rating applies to product "as packaged" (i.e., ambient temperature). Ratings are based upon HMIS® III and NFPA 704 (2007). An asterisk appearing after the HMIS Health® III numerical rating denotes a chronic hazard. National Fire Protection Association (NFPA) rating identifies the severity of hazards of material during a fire emergency (i.e., "on fire").

Legend:

* : Trademark owned by Emerald Performance Materials, LLC.

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA WEEL: American Industrial Hygiene Association (AIHA) Workplace Environmental Exposure Level (WEEL)

N/A: Not Applicable

N/E: None Established

STEL: Short Term Exposure Limit

TWA: Time Weighted Average (exposure for 8-hour workday)

Users Responsibility/Disclaimer of Liability:

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to develop appropriate work practice guidelines and employee instructional programs for your operation.

Safety Data Sheet Preparer:

Product Compliance Department

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United States