

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Trade name	77 % - 100 % Sulfuric Acid
Product code	None
CAS number/EC number	7664-93-9/231-639-5
Index number	016-020-00-8
Synonyms	Dihydrogen Sulfate ; Oil of Vitriol ; Vitriol Brown Oil ; Sulphuric Acid. Acide sulfurique (French) Sulfuric Acid / H ₂ SO ₄ Acid
Name / Chemical formula	
Chemical family	
Utilisation	Chemical industries ; Water treatment ; Fertilizer ; Pulp and Paper.
Manufacturers/Distributors	NorFalco Inc.-A Glencore company, 6000 Lombardo Center, The Genesis Bldg, Suite 650 Seven Hills, OH 44131 NorFalco Sales Inc.-A Glencore company, 6755 Mississauga Road, Suite 304, Mississauga, Ontario L5N 7Y2
Manufacturers	Noranda Income Limited Partnership (CEZinc), Salaberry-de-Valleyfield (Quebec) Canada J6T 6L4 Horne Smelter-A Glencore company, Rouyn-Noranda (Quebec) J9X 5B6 Brunswick Smelting-A Glencore company, Belledune, New Brunswick E0B 1G0 Sudbury integrated Nickel Operations-A Glencore company, Falconbridge, Ontario P0M 1S0
Web site	www.norfalco.com
Email	Request.Norfalco@glencore-ca.com
Information contact	André Auger, Administration Assistant
Product information	1-905-542-6901 (Mississauga)
Phone number (Medical emergency)	1-418-656-8090
Phone number (Emergency)	CANUTEC 1-613-996-6666
Phone number (Transportation emergency)	Canada 1-877-ERP-ACID (377-2243)
Phone number (Transportation emergency)	U.S.A. 1-800-424-9300 CHEMTREC

SECTION 2. HAZARDS IDENTIFICATION

Classification and labelling (Regulation (EC) No 1272/2008) (CLP/GHS) Classified and labeled

Hazard classes (categories)-Hazard statements

Sulfuric acid : Corrosion (Skin) (1A) : H314-Causes severe skin burns and eye damage.

Signal word Danger
Hazard pictograms Corrosive



Precautionary statements (prevention, response, disposal)

P260-Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P264-Wash hands, face and skin thoroughly after handling. P280-Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331-IF SWALLOWED: rinse mouth. DO NOT induce vomiting. P303+P361+P353-IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P363-Wash contaminated clothing before reuse. P304+P340-IF INHALED : Remove victim to fresh air and keep at rest in a position comfortable for breathing. P310-Immediately call a POISON CENTER or doctor/physician. P321-Specific treatment (see on this label). P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501-Dispose of contents/container in full compliance with Federal, Provincial and local regulations.

Other hazards Extremely corrosive. Harmful or fatal if swallowed. Harmful if inhaled. Severe eyes and skin irritation. Possibility of damage to the upper respiratory tract and lung tissues.

Environmental hazards Strong acid. Highly toxic to plants and to aquatic organisms.

Classification and labelling (Directives 67/548/EEC or 1999/45/EC) (DSD) Classified and labeled

Sulfuric acid : C Corrosive
Classification : C R35 (C ≥ 15 %)
Labeling : R35 ; S1, 26, 30, 45



Risk phrases R35-Causes severe burns

Safety phrase S1-Store locked up

S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S30- Never add water to this product

S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WHMIS classification (Canada) CLASS D-1A : Very toxic material causing immediate and serious effects
CLASS E : Corrosive material



SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No	Percentage (%)	Index number	EC No	Hazard classes
Sulfuric acid	7664-93-9	77 % to 100 %	016-020-00-8	231-639-5	H314
60 Deg Technical	7664-93-9	77.7	016-020-00-8	231-639-5	H314
66 Deg or 93% Technical	7664-93-9	93.2	016-020-00-8	231-639-5	H314
1.835 Electrolyte	7664-93-9	93.2	016-020-00-8	231-639-5	H314
98 % Technical	7664-93-9	98	016-020-00-8	231-639-5	H314
99 % Technical	7664-93-9	99	016-020-00-8	231-639-5	H314
100 % Technical	7664-93-9	100	016-020-00-8	231-639-5	H314
Water	7732-18-5	0-22	Not applicable	231-791-2	none

SECTION 4. FIRST-AID MEASURES

- After eye contact** Consult a physician. If medical treatment must be delayed, repeat the flushing with tepid water or soak the affected area with tepid water to help remove the last traces of sulfuric acid.
- After skin contact** Rinse skin with water/shower for 15 minutes (Pay particular attention to : Folds, crevices, creases, groin). While the patient is being transported to a medical facility, continue the application of cold, wet compresses.
Notes to physicians : *If medical treatment must be delayed, repeat the flushing with tepid water or soak the affected area with tepid water to help remove the last traces of sulfuric acid. Creams or ointments **SHOULD NOT be** applied before or during the washing phase of the treatment.* Call a physician if irritation persists. Wash contaminated clothing before reusing.
- After inhalation** If not breathing, give artificial respiration. Take precautions to avoid secondary contamination by residual acids. Difficult breathing : Give oxygen.
- After ingestion** Do not induce vomiting. **Conscious and alert person :** Rinse mouth with water and give ½ to 1 cup of water or milk to dilute material. **Spontaneous vomiting :** Keep head below hips to prevent aspiration ; Rinse mouth and give ½ to 1 cup of water or milk. **UNCONSCIOUS person :** **DO NOT** induce vomiting or give any liquid. Immediately obtain medical attention.

SECTION 5. FIRE-FIGHTING MEASURES

- Flash point** Not available
- Flammable limits** Not available
- Autolignition temperature** Not available
- Products of combustion** Releases of sulfur dioxide at extremely high temperatures.
- Fire hazard** Not flammable
- Explosion hazard** Reacts with most metals, especially when dilute : Hydrogen gas release (**Extremely** flammable, explosive). Risk of explosion if acid combined with water, organic materials or base solutions in enclosed spaces (Vaccum trucks, tanks). Mixing acids of different strengths/concentrations can also pose an explosive risk in an enclosed space/container.
- Extinguishing media** ERG (Emergency Response Guidebook) : Guide 137
When material is not involved in fire, do not use water on material itself.
Small fire : Dry chemical or CO₂. Move containers from fire area if you can do it without risk.
Large fire : Flood fire area with large quantities of water, while knocking down vapors with water fog. If insufficient water supply: knock down vapors only.
Fire involving Tanks or Car/Trailer Loads : Cool containers with flooding quantities of water until well after fire is out. Do not get water inside containers. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.
- Protective equipment** Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Generates heat upon addition of water, with possibility of spattering. Wear full protective clothing. Runoff from fire control may cause pollution. Neutralize run-off with lime, soda ash, etc., to prevent corrosion of metals and formation of hydrogen gas. Wear self-contained breathing apparatus if fumes or mists are present.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Measures** Review **Fire and Explosion Hazards** and **Safety Precautions** before proceeding with clean up. Stop flow if possible. Soak up small spills with dry sand, clay or diatomaceous earth.
- Methods** Dike large spills, and cautiously dilute and neutralize with lime or soda ash, and transfer to waste water treatment system. Prevent liquid from entering sewers, waterways, or low areas.
If this product is spilled and not recovered, or is recovered as a waste for treatment or disposal, the Reportable Quantity (U.S. DOT) is 1 000 lbs and 5 l or 5 kg (Section 8 TDG Canada) (Based on the sulfuric acid content of the solution spilled). Comply with Federal, State, and local regulations on reporting releases.
- Protective equipment** Review **Fire Fighting Measures and Handling** (Personnel Protection) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

SECTION 7. HANDLING AND STORAGE

Handling **DO NOT** get in eyes, on skin, or on clothing. Avoid breathing vapours or mist. Wear approved respirators if adequate ventilation cannot be provided. Wash thoroughly after handling. Ingestion or inhalation : Seek medical advice immediately and provide medical personnel with a copy of this SDS. **NEVER** add water to acid. Avoid aerosol formation.

Storage Sulfuric acid must be stored in containers or tanks that have been specially designed for use with sulfuric acid. **DO NOT** add water or other products (alkalis) to contents in containers as violent reactions will result with resulting high heat, pressure and/or generation of hazardous acid mists. P405-Store locked up. Keep containers away from heat, sparks, and flame. All closed containers must be safely vented before each opening. For more information on sulfuric acid tanks, truck tanks and tank cars including safe unloading information go to www.norfalco.com.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	CAS No	Control parameters	
		ACGIH (U.S.A.) 2014 TLV-TWA (mg/m ³)	OSHA (U.S.A.) PEL-TWA (mg/m ³)
Sulfuric acid	7664-93-9	0.2 (thoracic fr.)	1
60 Deg Technical	7664-93-9	0.2 (thoracic fr.)	1
66 Deg or 93% Technical	7664-93-9	0.2 (thoracic fr.)	1
1.835 Electrolyte	7664-93-9	0.2 (thoracic fr.)	1
98 % Technical	7664-93-9	0.2 (thoracic fr.)	1
99 % Technical	7664-93-9	0.2 (thoracic fr.)	1
100 % Technical	7664-93-9	0.2 (thoracic fr.)	1
Water	7732-18-5	Not established	Not established

Note : Sulfuric acid : Exposure limits may be different in other jurisdictions. NIOSH REL-TWA (≤10 hours) : 1 mg/m³. IDLH : 15 mg/m³. DNEL (inhalation, acute) : 0.1 mg/m³ (Human) ; DNEL_{inhalation, long term} : 0.05 mg/m³ (Human).

Consult local authorities for acceptable exposure limits.

Engineering controls Good general ventilation should be provided to keep vapour and mist concentrations below the exposure limits.

Individual protection Chemical splash goggles ; Full-length face shield/chemical splash goggles combination ; Acid-proof gauntlet gloves, and boots ; Long sleeve wool, acrylic, or polyester clothing under an acid proof suit ; Appropriate NIOSH respiratory protection if acid mist is present.



An apron can be used in place of acid proof suit in laboratory environment, or in handling small volumes of sulfuric acid. A formal risk assessment should be performed before following this recommendation to ensure exposure is minimized.

In case of emergency or where there is a strong possibility of considerable exposure, wear a complete acid suit with hood, boots, and gloves. If acid vapour or mist are present and exposure limits may be exceeded, wear appropriate NIOSH respiratory protection.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance	Liquid (Oily ; Clear to turbid)	Odour	Odourless
Molecular weight	98.08	Colour	Colourless to light grey
pH (1% soln/water)	<1	Volatility	<1 (Butyl Acetate = 1.0)
Boiling point	193°C to 327 °C (379°F to 621°F) @ 760 mm Hg	Vapour density	3.4
Melting point	-35°C to 11°C (-31°F to 52°F)	Dispersion	Yes (Water)
Vapour pressure	< 0.3 mm Hg @ 25°C (77 °F) < 0.6 mm Hg @ 38°C (100 °F)	Solubility	Yes (Water)

GRADE	Boiling point		Freezing point		Density
	DEG °C	DEG °F	DEG °C	DEG °F	
60 DEG TECHNICAL	193	380	- 12	10	1.706
66 DEG or 93% TECHNICAL	279	535	- 35	- 31	1.835
1.835 ELECTROLYTE	279	535	- 35	- 31	1.835
98 % TECHNICAL	327	621	- 2	29	1.844
99 % TECHNICAL	310	590	4	40	1.842
100 % TECHNICAL	274	526	11	51	1.839

SECTION 10. STABILITY AND REACTIVITY

Stability Yes (Under normal conditions of ambient temperature)

Reactivity	Reacts violently with water, organic substances and base solutions with evolution of heat and hazardous mists.
Dangerous decomposition	Possibility of decomposition if heated and in contact with sources of ignition. Release of toxic gases and vapours (Sulfur oxides (SO ₂ , SO ₃)).
Conditions to avoid	Heat, sources of ignition.
Polymerization	Polymerization will not occur.
Materials to avoid	Vigorous reactions with : Water ; alkaline solutions ; Metals, metal powder ; Carbides ; Chlorates ; Fulminates ; nitrates ; Picrates ; Strong oxidizing, reducing, or combustible organic materials. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, and carbides. Sulfuric acid reacts with metal to produce hydrogen, a flammable and potentially explosive gas. Hydrogen reacts with sulfides and generates hydrogen sulfide (Highly toxic gas). <i>NEVER add water directly to sulfuric acid because a violent exothermic reaction may occur.</i>
Corrosivity	Yes

SECTION 11. TOXICOLOGICAL INFORMATION

Routes of entry	Ingestion. Inhalation. Skin and eye contacts.
Irritation-Sensitisation	Sulfuric acid : Severe irritation: 5 mg/30 s, rinsing (eyes, rabbit). (RTECS). Sensitisation : Not known.
Acute toxicity	Sulfuric acid : ORAL acute (LD50) : 2 140 mg/kg (Rat). INHALATION acute (LC50, 2 hours) : 510 mg/m ³ (Rat) ; 320 mg/m ³ (Mouse). (RTECS).
Acute effects	May be fatal if inhaled or ingested in large quantity. Liquids or acid mists : May produce tissue damage : Mucous membranes (Eyes, mouth, respiratory tract). Extremely dangerous by eyes (conjunctivitis, permanent eye damage) and skin contact (Corrosive) (Severe skin burns, scars). Severe irritant for eyes : Inflammation (Redness, watering, itching). Very dangerous in case of inhalation at high concentrations (Mists) : May produce severe irritation of respiratory tract (Coughing, shortness of breath, choking). Maintain observation of the patient for delayed onset of pulmonary oedema.
Chronic effects	Target organs for acute and chronic overexposure (NIOSH 90-117) : Respiratory system, eyes, skin, teeth. Acid mists : Overexposure to strong inorganic mists containing sulfuric acid : Possibility of laryngeal cancer (HSBD, IARC). Possibility of irritation of the nose and throat with sneezing, sore throat or runny nose. Headache, nausea and weakness. Gross overexposure : Possibility of irritation of nose, throat, and lungs with cough, difficulty breathing or shortness of breath ; Pulmonary edema with cough, wheezing, abnormal lung sounds, possibly progressing to severe shortness of breath and bluish discoloration of the skin. Symptoms may be delayed. Repeated or prolonged exposure to mists may cause : Corrosion of teeth. Contact (Skin) : Possibility of corrosion, burns or ulcers. Contact with a 1 % solution : Possibility of slight irritation with itching, redness or swelling. Repeated or prolonged exposure (Mist) : Possibility of irritation with itching, burning, redness, swelling or rash. Contact (Eye) : Possibility of corrosion or ulceration (Blindness may result). Repeated or prolonged exposure (Mist) : Possibility of eye irritation with tearing, pain or blurred vision. Ingestion : Immediate effects of overexposure : Burns of the mouth, throat, esophagus and stomach, with severe pain, bleeding, vomiting, diarrhea and collapse of blood pressure. Damage may appear days after exposure.
Toxicity	Persons with the following pre-existing conditions warrant particular attention : Sulfuric acid : Laryngeal irritation.
Carcinogenicity	Strong inorganic acid mists containing sulfuric acid : PROVEN (Human, Group 1, IARC) ; SUSPECTED (Human, Group A2, ACGIH) ; Group X (NTP) ; Classification not applicable to sulfuric acid and sulfuric acid solutions.
Mutagenicity	Sulfuric acid : Cytogenetic analysis : 4 mmol/l (Ovaries, Hamster). (RTECS).
Teratogenicity	Not teratogenic (Mice, rabbits).
Reproductive system	Sulfuric acid : Inhalation (Lo CT) : 20 mg/m ³ /7 hour (6-18 days pregnant) reproductive effects : Specific developmental abnormalities (Musculoskeletal system) (Rabbit). (RTECS). <i>Eating, drinking and smoking must be prohibited in areas where this material is handled and processed. Wash hands and face before eating, drinking and smoking.</i>

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity : Slightly to moderately toxic. Toxicity to aquatic life increases with lowering pH. At pH lower than 5, only a few fish species can survive and at pH lower than 4, aquatic life is rare. PNEC _{fresh water} : 0,0025 mg/l. Sulfuric acid : Bluegill Sunfish (<i>Lepomis macrochirus</i>) (LC50 ; 48 hours) : 49 mg/l (Tap water, 20 °C, conditions of bioessay not specified). (HSDB). Flounder (<i>Platichthys flesus</i>) (LC50 ; 48
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	hours) : 100-330 mg/l (Aerated water, conditions of bioessay not specified). (HSDB). Flea water (<i>Daphnia magna</i>) (EC50, 48 h) : 60-70 mg/l.
	EYE : Concentrated compound is corrosive. 10 % solution : Moderate eye irritant.
	SKIN : Concentrated compound is corrosive. 10 % solution : Slight skin irritant.
	Single and repeated exposure : Irritation of the respiratory tract ; Corrosion of the respiratory tract ; Lung damage ; Labored breathing ; Altered respiratory rate ; Pulmonary oedema.
Mobility (Soil)	Easy soil seeping under rain action
Persistence and degradability	Sulfate ion : Ubiquitous in the environment. Metabolized by micro-organisms and plants.
Bioaccumulation	Sulfate ion : Ubiquitous in the environment. Metabolized by micro-organisms and plants without bioaccumulation.
PBT and vPvB assessment	Not applicable
Biodegradation product	Not available
Remarks on environment	Due to the product's composition, particular attention must be taken for transportation and storage. Protect from rain because the run-off water will become acidic and may be harmful to flora and fauna.
BOD5 and COD	Not available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	Cleaned-up material may be an hazardous waste on <i>Resource Conservation and Recovery Act</i> (RCRA) on disposal due to the corrosivity characteristic. DO NOT flush to surface water or sanitary sewer system. Comply with Federal, State, and local regulations. If approved, neutralize and transfer to waste treatment system.
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SECTION 14. TRANSPORT INFORMATION

TDG (Canada)	CLASS 8 Corrosives
	Reportable Quantity 5 l or 5 kg
PIN	UN1830 SULFURIC ACID PG II
Special provisions	None
DOT (U.S.A.)	Proper Shipping Name SULFURIC ACID
	Hazard Class 8
	UN N° 1830
	DOT/IMO Label CORROSIVE
	Packing Group II
	Reportable Quantity 1000 lbs (454 kg)
	Shipping Containers Tank Cars, Tank Trucks, Vessel
IMDG (Maritime)	Proper Shipping Name SULFURIC ACID
	Hazard Class 8
	UN N° 1830
	IMO Label 8 CORROSIVE
	Packing Group II
	EMS F-A ; S-B
ERG	Marine pollutant No
	Guide 137



SECTION 15 REGULATORY INFORMATION

CEPA DSL (CANADA)	CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) : On the Domestic Substances List (DSL) ; Acceptable for use under the provisions of CEPA. Reportable Quantity : 5 l or 5 kg Sulfuric Acid is a Class B Drug Precursor under <u>Health Canada's Controlled Drugs and Substances Act</u> and <u>Precursor Control Regulations</u> .
Regulations (U.S.A.)	CERCLA Section 103 Hazardous substances (40 CFR 302.4) ; SARA Section 302 Extremely Hazardous Substances (40 CFR 355) : Yes ; SARA Section 313, Toxic Chemicals (40 CFR 372.65) ; US: TSCA Inventory : Listed : Sulfuric acid (RQ) : 1 000 pounds (454 kg) Sulfuric Acid is subject to reporting requirements of Section 313, <u>Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA)</u> , 40 CFR Part 372. Certain companies must report emissions of Sulfuric Acid as required under <u>The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)</u> , 40 CFR Part 302 For more information call the <u>SARA Hotline</u> 800-424-9346. Strong Inorganic Acid Mists Containing Sulfuric Acid : Chemical listed effective March 14, 2003 to the <u>State of California, Proposal 65</u> . <u>U.S. FDA Food Bioterrorism Regulations</u> : These regulations apply to Sulfuric Acid when being distributed, stored or used for Food or Food Processing. TSCA (EPA, Toxic Substance Control Act) Chemical Inventory (40 CFR710) : Listed.

	Sulfuric acid
European Union	Ingredients on European Inventory of Existing Commercial Chemical Substances (EINECS) : Yes
Classifications HCS (U.S.A.)	Corrosive liquid

NFPA (National Fire Protection Association) (U.S.A.)

Fire Hazard 0 **Reactivity** 2 **Health** 3 **Special Hazard** ACID

NPCA- HMIS Rating

Fire Hazard 0 **Reactivity** 2 **Health** 3

SECTION 16. OTHER INFORMATION

- Références**
- TLVs and BEIs (2014). Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices. ACGIH, Cincinnati, OH – <http://www.acgih.org>
 - CCOHS (2014) - Canadian Centre for Occupational Health and Safety - <http://www.ccohs.ca/>
 - CSST (2013) - Commission de la Santé et de la Sécurité du Travail (Québec). Service du répertoire toxicologique - <http://www.reptox.csst.qc.ca/>
 - ECHA (2011). Guidance on the Application of the CLP Criteria. Guidance to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging (CLP) of substances and mixtures. 04/2011. ECHA-11-G-06-EN. © European Chemicals Agency – <http://echea.europa.eu>
 - ECHA (2011). Guidance on the compilation of safety data sheets. Version 1.0 – September 2011. ECHA-2011-G-08-EN. © European Chemicals Agency – <http://echea.europa.eu>
 - ESIS : C&L (Classification and Labelling), substances ou préparations selon la Directive 67/548/EEC (substances) et 1999/45/EC (préparations).
 - ESIS : EINECS (European Inventory of Existing Commercial chemical Substances) O.J. C 146A, 15.6.1990 - <http://esis.jrc.ec.europa.eu/>
 - ESIS : EINECS corrections publiées dans O.J. C 54/13 01.03.2002, 2002/C54/08.
 - GMU (2008). Guide des Mesures d'Urgence, U.S. Department of Transportation, Transport Canada, et le Secretariat of Communications and Transportation of Mexico.
 - HSDB (2014) - Hazardous Substances Data Bank. **TOXNET®** Network of databases on toxicology, hazardous chemicals, and environmental health. NLM Databases & Electronic Resources, U.S. National Library of Medicine, NHI, 8600 Rockville Pike, Bethesda, MD 20894 - <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>
 - IARC - Monographs on the Evaluation of Carcinogenic Risks to Humans (collection) – [IARC Publications](http://www.iarc.fr/en/websites/databases.php) <http://www.iarc.fr/en/websites/databases.php>
 - IMO (2002). CARRIAGE OF DANGEROUS GOODS. INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE ANNEXES AND SUPPLEMENTS. Revised Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS Guide). Ref. T3/1.01. MSC/Circ.1025. 17 July 2002.
 - Merck Index (1999). Merck & CO., Inc, 12th edition.
 - NIOSH U.S. (2014) - Pocket Guide to Chemical Hazards - <http://www.cdc.gov/niosh/ngp/>
 - OECD (2004). *Guidelines for the Testing of Chemicals / Section 2: Effects on Biotic Systems* Test No 202: Daphnia sp., Acute Immobilisation Test. OECD Publishing. Date of publishing: Nov 23, 2004. 12 pages. Electronic book (PDF version). ISBN: 9789264069954 , Code OECD: 979920202E1.
 - OECD (1992). *Guidelines for the Testing of Chemicals / Section 2: Effects on Biotic Systems* Test No 203: Daphnia sp., Acute Immobilisation Test. OECD Publishing. Date of publishing: Nov 23, 2004. 12 pages. Electronic book (PDF version). ISBN: 9789264069954 , Code OECD: 979920202E1.
 - Patty's Industrial Hygiene and Toxicology, 3rd Revised Edition.
 - Règlement sur les produits contrôlés (Canada).
 - RÈGLEMENTS (CE) No 1272/2008 DU PARLEMENT EUROPÉEN ET DU CONSEIL DU 16 décembre 2008 relatif à la classification, à l'étiquetage et à l'emballage des substances et des mélanges (CLP), modifiant et abrogeant les directives 67/548/CEE et 1999/45/CE et modifiant le règlement (CE) no 1907/2006. (Texte présentant de l'intérêt pour l'EEE). Journal officiel de l'union européenne. L353 p1-1355, 31.12.2008. <http://www.reach-compliance.eu/french/legislation/docs/launchers/CLP/launch-2008-1272-EC-CLP.html>
 - RTECS (2014). Registry of Toxic Effects of Chemical Substances, NIOSH, CDC. [NIOSH RTECS](http://www.cdc.gov/niosh-rtecs/EU958940.html) (<http://www.cdc.gov/niosh-rtecs/EU958940.html>)
 - Toxicologie industrielle & intoxication professionnelle, 3e édition, Lauwerys.
 - TSCA (2014)-U.S. EPA Toxic Substance Control Act, Chemical Inventory. System of Registries (SoR), [Substance Registry Services](http://www.epa.gov/sor_internet/registry/substreg/searchandretrieve/substancesearch/search.do) http://www.epa.gov/sor_internet/registry/substreg/searchandretrieve/substancesearch/search.do

Glossary

- BCF : Bioconcentration factor
- CLP : Classification, labelling, packaging of substances and mixtures (REACH)
- BOD5 : Biochemical oxygen demand during 5 days
- COD : Chemical oxygen demand
- DNEL : Derived No-Effect Level (REACH)
- DSD : Dangerous Substances Directive (Directive 67/548/EEC)
- DPD : Dangerous Preparations Directive (Directive 1999/45/EC)

ECHA	European Chemicals Agency
EMS	: Revised Emergency Response Procedures for Ships Carrying Dangerous Goods(IMO)
HSDB	: Hazardous Substances Data Bank (USA)
IARC	: International Agency for Research on Cancer.
NIOSH	: National Institute of Occupational Safety and Health (USA)
NTP	: U.S. National Toxicology Program (USA)
PNEC	: Predicted No Effect Concentration
PBT	: Persistent, bioaccumulative , toxic substances.
vPvB	: Very persistent, very bioaccumulative substances.
REACH	: Registration, Evaluation, Authorisation and Restriction of Chemicals (ECHA)
RTECS	: Registry of Toxic Effects of Chemical Substances (USA)
STOT	: Specific target organ toxicity

Note

For further information, see NorFalco Inc. Sulfuric Acid « Storage and Handling Bulletin ».

Because of its corrosive characteristics and inherent hazards, Sulfuric Acid should not be used in sewer or drain cleaners or any similar application; regardless of whether they are formulated for residential, commercial or industrial use. NorFalco will not knowingly sell sulfuric acid to individuals or companies who repackage the product for sale as sewer or drain cleaners, or any other similar use.

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

For additional information, please visited our website : www.norfalco.com

Written by : Groupe STEM Consultants / NorFalco Sales Inc.

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Partial review : None

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Verified by : Marie-France Rollin and Eric Kuraitis, Technical Representative - Sulfuric Acid

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