

SAFETY DATA SHEET

CH-50



Section 1. Identification

GHS product identifier : CH-50

Product code : 11664100, 11664470

SDS # : DUB00455

Other means of identification : Not available.

Product type : Liquid.

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

Identified uses : Acid Cleaner This product is intended to be diluted prior to use

Supplier/Manufacturer : DuBois Chemicals, Inc. DuBois Chemicals Canada, Inc.
3630 E. Kemper Road 1155 North Service Road West
Cincinnati, Ohio 45241 Unit 6
Phone: 1-800-438-2647 Oakville, Ontario, L6M 3E3 Canada
Phone: 1-866-861-3603

Emergency telephone number : 1-866-923-4919 (US and Canada)
01-651-523-0314 (Int'l and Mexico)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : CORROSIVE TO METALS - Category 1
ACUTE TOXICITY: ORAL - Category 3
ACUTE TOXICITY: SKIN - Category 2
ACUTE TOXICITY: INHALATION - Category 3
SKIN CORROSION/IRRITATION - Category 1
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : May be corrosive to metals.
Fatal in contact with skin.
Toxic if swallowed or if inhaled.
Causes severe skin burns and eye damage.

Precautionary statements

Prevention : Wear eye/face protection. Wear protective gloves. Wear protective clothing. Keep only in original container. Use only outdoors or in a well-ventilated area. Do not get in eyes, on skin, or on clothing. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Absorb spillage to prevent material damage. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Gently wash with plenty of soap and water. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a

Section 2. Hazards identification

POISON CENTER or physician.

Storage : Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
sulphuric acid	10 - 20	7664-93-9
Hydrofluoric acid	5 - 10	7664-39-3
Alcohols, C12-15, ethoxylated propoxylated	1 - 5	68551-13-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Gently wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse. Responders should put on appropriate personal protective equipment to protect themselves before assisting victims. Immediately remove all contaminated clothing. Immediately flush the affected area for five minutes with large amounts of water. While the victim is being rinsed with water, have someone call to arrange medical treatment. If the exposure is to the eyes face, groin, or covers a large area, call 911. For smaller exposure, (i.e. A few drops on the skin), call a physician or poison control center. Immediately after flushing with water start massaging 2.5% calcium glucagon gel into the burn site. Responders must wear gloves when applying the gel to prevent secondary burns to their hands. Apply the gel every 15 minutes and massage until pain/redness ceases or professional medical care is available.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician.

Section 4. First aid measures

Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Toxic if inhaled. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
- Skin contact** : Causes severe burns. Fatal in contact with skin. Burns or irritation resulting from skin contact may be delayed and not immediately apparent. If absorbed through skin, fluoride can disrupt the body's electrolyte balance by binding essential metal ions such as magnesium and calcium (hypocalcemia) which may disrupt normal heart and nervous system functions. Disruptions to the body's potassium balance (hyperkalemia) may also occur. Effects may appear immediately or be delayed as much as 4 hours after exposure. Repeated exposure to low levels of fluoride through ingestion, inhalation, or dermal absorption can cause fluorosis. The primary target is the skeletal system. Effects can include osteoporosis, increased bone density, mottled tooth enamel, and calcification of ligaments.
- Ingestion** : Toxic if swallowed. May cause burns to mouth, throat and stomach. Ingestion of large amounts may cause fluoride toxicity. Can cause hypocalcemia resulting in possibly fatal, delayed ventricular fibrillation. Death usually results from uncontrollable ventricular fibrillation. Intravenous calcium chloride or gluconate may be indicated to prevent hypocalcemia. Consultation with a medical toxicologist is advised.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains Ingestion of large amounts may cause poisoning. Symptoms include: methemoglobinemia, cyanosis (blue skin), marked fall in blood pressure, leading to collapse, coma and possibly death.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
sulfur oxides
halogenated compounds
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Absorb spillage to prevent material damage. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store in corrosive resistant container with a resistant inner liner. Store locked up. Separate from alkalis. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

- Control parameters
- Occupational exposure limits

Section 8. Exposure controls/personal protection

Ingredient name	CAS #	ACGIH	OSHA	Mexico
sulphuric acid	7664-93-9	TWA: 0.2 mg/m ³ 8 hours. Form: Thoracic fraction	TWA: 1 mg/m ³ 8 hours.	
Hydrofluoric acid	7664-39-3	TWA: 0.5 ppm, (as F) 8 hours. C: 2 ppm, (as F)	TWA: 3 ppm 8 hours. TWA: 2.5 mg/m ³ , (as F) 8 hours.	LMPE-Pico: 2.5 mg/m ³ LMPE-Pico: 3 ppm

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : If a risk assessment indicates this is necessary, use a properly fitted, air-purifying or airfed respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: splash goggles

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Personal protective equipment (Pictograms) :



Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Aqueous solution]

Color : Clear Colorless.

Odor : Pungent. acidic smell

Odor threshold : Not available.

pH : <1.5

Melting point : Not available.

Boiling point : Not available.

Flash point : Closed cup: Not applicable. [Product does not sustain combustion.]

Section 9. Physical and chemical properties

Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 1.13
Solubility	: Easily soluble in the following materials: cold water and hot water.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.
Elemental Phosphorus	: 0 %
VOC content	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: Extremely reactive or incompatible with the following materials: oxidizing materials, metals and alkalis. Reactive or incompatible with the following materials: moisture.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Storage	: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store in corrosive resistant container with a resistant inner liner. Store locked up. Separate from alkalis. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 11. Toxicological information

Information on toxicological effects

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
sulphuric acid	A2	1	-	-	Known to be a human carcinogen.	-
Hydrofluoric acid	A4	3	-	-	-	-

Strong inorganic sulfuric acid mists are classified as known human carcinogens by IARC and NTP.

Section 11. Toxicological information

Information on the likely routes of exposure :

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Toxic if inhaled. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
- Skin contact** : Causes severe burns. Fatal in contact with skin. Burns or irritation resulting from skin contact may be delayed and not immediately apparent. If absorbed through skin, fluoride can disrupt the body's electrolyte balance by binding essential metal ions such as magnesium and calcium (hypocalcemia) which may disrupt normal heart and nervous system functions. Disruptions to the body's potassium balance (hyperkalemia) may also occur. Effects may appear immediately or be delayed as much as 4 hours after exposure. Repeated exposure to low levels of fluoride through ingestion, inhalation, or dermal absorption can cause fluorosis. The primary target is the skeletal system. Effects can include osteoporosis, increased bone density, mottled tooth enamel, and calcification of ligaments.
- Ingestion** : Toxic if swallowed. May cause burns to mouth, throat and stomach. Ingestion of large amounts may cause fluoride toxicity. Can cause hypocalcemia resulting in possibly fatal, delayed ventricular fibrillation. Death usually results from uncontrollable ventricular fibrillation. Intravenous calcium chloride or gluconate may be indicated to prevent hypocalcemia. Consultation with a medical toxicologist is advised.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains Ingestion of large amounts may cause poisoning. Symptoms include: methemoglobinemia, cyanosis (blue skin), marked fall in blood pressure, leading to collapse, coma and possibly death.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Not available.

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : Strong inorganic sulfuric acid mists are classified as known human carcinogens by IARC and NTP. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.

Section 11. Toxicological information

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	71.13 mg/kg
Dermal	71.46 mg/kg
Inhalation (vapors)	7.86 mg/l

Section 12. Ecological information

Ecotoxicity : Not available.

Aquatic ecotoxicity

Not available.

Conclusion/Summary : May be harmful to the environment if released in large quantities.

Section 13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D002 [corrosive]

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

IATA/IMDG/DOT/TDG: Please refer to the Bill of Lading/receiving documents for up to date shipping information.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 12(b) one-time export**: No products were found.
TSCA 12(b) annual export notification: No products were found.
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 311: sulphuric acid; Hydrofluoric acid
Clean Air Act (CAA) 112 regulated toxic substances: Hydrofluoric acid
CERCLA: Hazardous substances.: sulphuric acid: 1000 lbs. (454 kg); Hydrofluoric acid: 100 lbs. (45.4 kg);

EPA Registration Number : Not available.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 302/304

Composition/information on ingredients

Section 15. Regulatory information

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
sulphuric acid	10 - 20	Yes.	1000	66.3	1000	66.3
hydrofluoric acid	5 - 10	Yes.	100	10.4	100	10.4

SARA 304 RQ : 1429.1 lbs / 648.8 kg [151.7 gal / 574.2 L]

SARA 311/312

Classification : Reactive
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	%
Supplier notification	sulphuric acid	7664-93-9	10 - 20
	Hydrofluoric acid	7664-39-3	5 - 10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: SULFURIC ACID; HYDROGEN FLUORIDE
New York : The following components are listed: Sulfuric acid; Hydrofluoric acid; Fluoric acid
New Jersey : The following components are listed: SULFURIC ACID; DIHYDROGEN SULFATE; HYDROGEN FLUORIDE; FLUORIC ACID
Pennsylvania : The following components are listed: SULFURIC ACID; HYDROFLUORIC ACID

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
sulphuric acid	Yes.	No.	No.	No.

Canada

Canadian lists

Canadian NPRI : The following components are listed: Sulphuric acid; Hydrogen fluoride
Canada inventory : All components are listed or exempted.
Canadian PCP/DIN Number : Not available.

International regulations

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: Not determined.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Section 16. Other information

History

Date of printing : 10/9/2015.

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Date of previous issue : 3/30/2015.

Version : 1.01

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.