

# How to Read A Safety Data Sheet (SDS)

Safety Data Sheets (SDS) are an important requirement of Health Canada's decision to align the Workplace Hazardous Materials Information System (WHMIS) with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). SDS are essential documents that are used to inform employees, students, and the general public about how materials can be safely handled, used, and stored. Since Flinn provides chemicals only to schools, we have written Flinn SDS specifically for teachers and their students. Using clear and straightforward language, each Flinn SDS provides all the relevant safety and hazard information in a consistent, useful, and easy-to-read format. Flinn SDS contain 16 sections that are divided into four major areas, each designed to answer a specific question.

Each Flinn SDS follows the same format and the information is always found in the same location, making it a valuable resource in the event of an emergency. With your first chemical order of the year, every teacher will receive a CD from Flinn Scientific containing all of our SDS. You may also request another CD at any time. Flinn SDS are updated on a regular basis, guaranteeing the most up-to-date safety information possible. For a more detailed description of the Flinn Online Chemventory program, please refer to pages 680–681. For our customers' convenience, Flinn has also placed a free complete set of SDS on our website. Simply go to [www.flinnsci.ca](http://www.flinnsci.ca) and click on the Teacher Resources button.

## What is the material and what do I need to know immediately in an emergency?

### Sections 1–3.

**A** It is important that the chemical name on the label match the name on the SDS. Many chemicals have similar names, but very different properties. This section also includes product use and emergency phone number.

**B** The most important section! Provides an overview of the physical and health hazard risks associated with using the material.

**C** Signal words, either Danger or Warning, heighten the awareness of the relative risk when using certain chemicals. Danger is the more severe warning!

**D** Eight pictograms exist in the GHS classification scheme to call attention to physical and health hazards. See page 697 for more information about GHS pictograms.




**E** This section includes the ingredients, concentration, and CAS#. The CAS# is the single identifying number for each specific substance. CAS# should match the CAS# on the bottle label.

## What should I do if a hazardous situation occurs?

### Sections 4–6.

**F** Seek medical attention. These first-aid measures are only meant for immediate first aid and should always be followed up with professional medical care. The CAS# is the single identifying number for each specific substance. CAS# should match the CAS# on the bottle label.

**G** This section is written for the firefighter. Flash point (the lowest temperature at which enough vapour is present to form an ignitable mixture with air); upper and lower flammable limits; and the auto ignition temperature (AIT) are common properties included in this section.

00003635		SAFETY DATA SHEET		Page 1
		Flinn Scientific Canada Inc. 175 Longwood Road South Hamilton, Ontario L8P 0A1 Canada 1-844-200-1455		
PRODUCT: Hydrochloric Acid Solution, 3M		CODE: HJ0034		
Section 01: IDENTIFICATION				
MANUFACTURER.....	Flinn Scientific Inc. PO Box 219 Batavia, Illinois 60510 USA Tel: 1-800-452-1281			
PRODUCT NAME.....	Hydrochloric Acid Solution, 3M			
PRODUCT USE.....	This product is intended for use in a laboratory. The use of this product is restricted for use in a laboratory only.			
PRODUCT CODE(S).....	HJ0034			
EMERGENCY NUMBER.....	CHEMTREC Emergency Phone Number: 703-527-3887			
Section 02: HAZARD IDENTIFICATION				
 				
SIGNAL WORD.....	DANGER			
HAZARD CLASSIFICATION.....	Corrosive to Metals — Category 1. Acute Toxicity (Oral) — Category 4. Skin Corrosion — Category 1. Serious Eye Damage — Category 1. Specific Target Organ Toxicity — Single Exposure — Category 3.			
HAZARD STATEMENT(S).....	H290 May be corrosive to metals. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H335 May cause respiratory irritation.			
PRECAUTIONARY STATEMENT(S).....	P234 Keep only in original container. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area.			
RESPONSE.....	P300 Absorb spillage to prevent material damage. P301+P310 IF SWALLOWED: Immediately call a POISON CONTROL center. P330 Rinse mouth. P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P310 IMMEDIATELY call a POISON CONTROL center or a doctor. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P363 Wash contaminated clothing before reuse.			
STORAGE.....	P405 Store in a corrosion resistant container. Flinn Suggested Chemical Storage Pattern: Organic #9. P405 Store locked up.			
DISPOSAL.....	P501 Dispose of contents/container with local regulations.			
Section 03: COMPOSITION/INFORMATION ON INGREDIENTS				
Hazardous Ingredients	CAS #	Wt. %		
Water	7732-18-5	90		
Hydrochloric acid	7647-01-0	10		
Section 04: FIRST AID MEASURES				
MEDICAL ATTENTION AND SPECIAL.....	Immediately call a POISON CENTER or physician.			
TREATMENT.....	Remove victim to fresh air and keep at rest in a position comfortable for breathing.			
INHALATION.....	Rinse mouth. Do NOT induce vomiting.			
SKIN CONTACT.....	Immediately remove all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse.			
EYE CONTACT.....	Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.			

**H** The NFPA code is a numerical code established by the National Fire Protection Association. It rates the substance *under fire conditions* in four categories. **Health, Flammability, Reactivity**, and unusual reactivity: 4 is a severe hazard, 0 is no hazard.

**I** How to clean up a spill. Always remove unprotected personnel from area and make sure all students are safe. Contain the spill with sand or absorbent materials.

## How to Read A Safety Data Sheet (SDS), continued

How can I prevent hazardous situations from occurring?

Sections 7–11.

**J** Use the Flinn Suggested Chemical Storage Pattern to prevent accidents and improve safety. Special storage and usage tips are also included.

**K** Wear personal protective equipment such as goggles, gloves, and an apron.

**L** Clear, concise, and useful physical and chemical properties help you learn more about the chemicals you use. The first part describes the material's appearance. If it doesn't look like this, STOP. Do not use it. It may be more or less hazardous.

**M** Describes the conditions or reactions to be avoided. Also provides some indication about anticipated shelf life.

**N** Oral (ORL), inhalation (IHL), and skin absorption (SKN) toxicity data on test animals is included. For more information on LD<sub>50</sub>, see pages 700–701.

**O** More detail on how the material may injure you. Acute (short exposure) and chronic (long-term) effects are listed along with their target organs.

Other useful information.

Sections 12–16.

**P** Ecological impact if large amounts (e.g., tank car) of the chemical spill near a river or lake.

**Q** Suggested disposal methods for laboratory quantities of chemicals.

**R** Department of Transportation shipping information is included for your school district, emergency responders, and transport/shipping departments.

**S** Regulatory information used by regulatory compliance personnel.

**T** Flinn Scientific Canada has an ongoing program to update its SDS. As professional chemists, we try our best to provide science teachers with the most accurate and useful safety information. Call Flinn if you have any questions. We can help!

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PRODUCT: Hydrochloric Acid Solution, 3M		CODE: HJ0034
Section 05: FIRE FIGHTING MEASURES <b>G</b>		
EXTINGUISHING MEDIA..... Use a tri-class dry chemical fire extinguisher. HAZARDOUS COMBUSTION PRODUCT..... Nonflammable, noncombustible solution. SPECIAL FIRE FIGHTING PROCEDURE..... None established. NFPA CODE.....		
Section 06: ACCIDENTAL RELEASE MEASURES <b>I</b>		
PROTECTIVE EQUIPMENT AND..... Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly EMERGENCY PROCEDURES..... after handling. METHODS AND MATERIALS FOR..... Ventilate area and contain the spill with sand or other inert absorbent material, neutralize CONTAINMENT AND CLEANING UP..... with sodium bicarbonate or calcium hydroxide, and deposit in a sealed bag or container. Absorb spills to prevent material damage - See Sections 8 and 13 for further information.		
Section 07: HANDLING AND STORAGE <b>J</b>		
HANDLING PROCEDURES..... Flinn Suggested Chemical Storage Pattern: Inorganic #9. Keep container tightly closed. STORAGE NEEDS..... Use only in a hood or well-ventilated area. Keep only in original container. Store with acids, except nitric acid. Store in a dedicated acid cabinet and away from any source of water; if an acid cabinet is not available, store in Flinn Saf-Cube™.		
Section 08: EXPOSURE CONTROLS / PERSONAL PROTECTION <b>K</b>		
Ingredients	TWA	ACGIH TLV STEL
Water	Not established	Not established
Hydrochloric acid	2 ppm	Not established
PEL	OSHA PEL STEL	REL
Water	Not established	Not established
Hydrochloric acid	5 ppm (7 mg/m <sup>3</sup> )	Not established
NIOSH		
Water	Not established	5 ppm (7 mg/m <sup>3</sup> )
Hydrochloric acid	5 ppm (7 mg/m <sup>3</sup> )	5 ppm (7 mg/m <sup>3</sup> )
PROTECTIVE EQUIPMENT..... Wear protective gloves, protective clothing, and eye protection. EYE/TYPE..... Wear eye protection. RESPIRATORY TYPE..... Use only in a hood or well-ventilated area. GLOVES/ TYPE..... Protective gloves. CLOTHING/TYPE..... Protective clothing. FOOTWEAR/TYPE..... Protective footwear. BODY/TYPE..... General personal protective equipment.		
Section 09: PHYSICAL AND CHEMICAL PROPERTIES <b>L</b>		
APPEARANCE..... Colorless to pale yellow liquid. ODOUR..... Pungent odour. ODOUR THRESHOLD..... Not available. pH..... <1. MELTING POINT (°C)..... Not applicable. FREEZING POINT (°C)..... Not available. BOILING POINT (°C)..... Not available. FLASH POINT (°C), METHOD..... Not available. EVAPORATION RATE..... Not available. UPPER FLAMMABLE LIMIT (% VOL)..... Not available. LOWER FLAMMABLE LIMIT (% VOL)..... Not available. VAPOUR PRESSURE (mm Hg)..... No data. VAPOUR DENSITY (AIR=1)..... No data. SOLUBILITY..... Water and alcohol. AUTO IGNITION TEMPERATURE (°C)..... Not available. DECOMPOSITION TEMPERATURE..... Not available. VISCOSITY..... Not available.		
Section 10: STABILITY AND REACTIVITY <b>M</b>		
STABILITY..... Shelf life: Good, if stored properly. Stable under normal conditions. POSSIBILITY OF HAZARDOUS REACTIONS..... Corrodes metal, including steel. Produces heat and may splatter violently when diluted with water. CONDITIONS TO AVOID..... Avoid contact with strong oxidizers, bases, metals, metal oxides, hydroxides, amines, and other alkaline materials. INCOMPATIBLE MATERIALS..... Cyanides, sulfides, and formaldehyde. HAZARDOUS DECOMPOSITION PRODUCTS..... No data available.		

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PRODUCT: Hydrochloric Acid Solution, 3M		CODE: HJ0034
Section 11: TOXICOLOGICAL INFORMATION		
Ingredients	LC50	LD50
Water	Not available	Not available
Hydrochloric acid	3124 ppm 1 hour rat	900 mg/kg oral rabbit
ROUTE OF ENTRY:..... Eye and skin corrosion. Respiratory irritation, coughing. ACUTE EFFECTS..... Corrosive to teeth. CHRONIC EFFECTS..... Respiratory tract, teeth, skin, eyes. TARGET ORGANS.....		
Section 12: ECOLOGICAL INFORMATION <b>P</b>		
ECOTOXICITY..... Does not biodegrade in soil, may be toxic to aquatic life.		
Section 13: DISPOSAL CONSIDERATIONS <b>Q</b>		
DISPOSAL METHODS..... Please review all Federal, Provincial and Local Regulations that may apply before proceeding.		
Section 14: TRANSPORT INFORMATION <b>R</b>		
SHIPPING NAME..... UN1789 - HYDROCHLORIC ACID - Class 8 - Packing group III. PROOF OF CLASSIFICATION..... This product has been classified in accordance with Part 2 of the Transportation of Dangerous Goods Regulations.		
Section 15: REGULATORY INFORMATION <b>S</b>		
CEPA STATUS..... DSL - The substance is specified on the public Portion of the Domestic Substances List. U.S. TSCA INVENTORY STATUS..... Listed. RCRA code D002. EINECS STATUS..... Listed (231-595-7).		
Section 16: OTHER INFORMATION <b>T</b>		
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