SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Acetic acid
Number	:	000000020238
Product Use Description	:	Laboratory chemicals, Industrial use
Manufacturer or supplier's details	:	Honeywell International Inc. 1953 South Harvey Street Muskegon, MI 49442
For more information call	:	1-800-368-0050 +1-231-726-3171 (Monday-Friday, 9:00am-5:00pm)
In case of emergency call	:	**Medical: 1-800-498-5701 or +1-303-389-1414**
	:	**Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887**
	:	
	:	(24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Form	:	liquid
Color	:	colourless
Odor	:	stinging

Classification of the substance or mixture

Classification of the substance or mixture	:	Flammable liquids, Category 3 Skin corrosion, Category 1A Serious eye damage, Category 1

GHS Label elements, including precautionary statements

Symbol(s) :

Signal word : Danger

Hazard statements : Flammable liquid and vapour.
Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Wash contaminated clothing before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C2H4O2

Chemical nature : Substance

Chemical name	CAS-No.	Concentration
Acetic acid	64-19-7	100.00 %

SECTION 4. FIRST AID MEASURES

Inhalation : Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician immediately.

Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician immediately.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Notes to physician

Treatment : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide (CO2)
Dry chemical
Alcohol-resistant foam
Water mist
Cool closed containers exposed to fire with water spray.

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

Specific hazards during firefighting	:	Flammable. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO2)
Special protective equipment for firefighters	:	In the event of fire and/or explosion do not breathe fumes. Wear self-contained breathing apparatus and protective suit.
Further information	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. In the event of fire, cool tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Wear personal protective equipment. Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Ensure adequate ventilation. Do not breathe vapours or spray mist. Do not get in eyes, on skin, or on clothing.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Methods for cleaning up	:	Ventilate the area. No sparking tools should be used. Use explosion-proof equipment. Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

Handling

Handling	:	Wear personal protective equipment. Use only in well-ventilated areas. Keep container tightly closed. Do not smoke. Do not swallow. Do not breathe vapours or spray mist. Do not get in eyes, on skin, or on clothing.
Advice on protection against fire and explosion	:	Keep away from fire, sparks and heated surfaces. Take precautionary measures against static discharges. Ensure all equipment is electrically grounded before beginning transfer operations. Use explosion-proof equipment. Keep product and empty container away from heat and sources of ignition. No sparking tools should be used.

Storage

Requirements for storage areas and containers	:	Store in area designed for storage of flammable liquids. Protect from physical damage. Keep containers tightly closed in a dry, cool and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from heat and sources of ignition. Keep away from direct sunlight. Store away from incompatible substances. Container hazardous when empty. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures	:	Ensure that eyewash stations and safety showers are close to the workstation location.
Engineering measures	:	Use with local exhaust ventilation. Prevent vapour buildup by providing adequate ventilation during and after use.

Eye protection	:	Goggles or face shield, giving complete protection to eyes
Hand protection	:	Rubber gloves Neoprene gloves Gloves must be inspected prior to use. Replace when worn.
Skin and body protection	:	Acid-resistant protective clothing Rubber or plastic apron Rubber or plastic boots
Respiratory protection	:	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Use NIOSH approved respiratory protection.
Hygiene measures	:	Remove and wash contaminated clothing before re-use. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Do not get in eyes, on skin, or on clothing.

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
Acetic acid	64-19-7	TWA : Time weighted average	25 mg/m3 (10 ppm)	10 2006	CAD AB OEL:Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)
Acetic acid	64-19-7	STEL : Short term exposure limit	37 mg/m3 (15 ppm)	10 2006	CAD AB OEL:Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Acetic acid	64-19-7	STEL : Short term exposure limit	(15 ppm)	07 2007	CAD BC OEL:Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Acetic acid	64-19-7	TWA : Time weighted average	(10 ppm)	07 2007	CAD BC OEL:Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Acetic acid	64-19-7	TWA : Time weighted average	(10 ppm)	03 2011	CAD MB OEL:Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Acetic acid	64-19-7	STEL : Short term exposure limit	(15 ppm)	03 2011	CAD MB OEL:Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Acetic acid	64-19-7	TWA : Time weighted average	(10 ppm)	11 2010	CAD ON OEL:Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Acetic acid	64-19-7	STEL : Short Term Exposure Limit (STEL):	(15 ppm)	11 2010	CAD ON OEL:Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Acetic acid	64-19-7	8 HR ACL : 8 hour average contamination limit:	(10 ppm)	05 2009	CAD SK OEL:Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Acetic acid	64-19-7	15 MIN ACL : 15 minute average contamination limit:	(15 ppm)	05 2009	CAD SK OEL:Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Acetic acid	64-19-7	STEL : Short term exposure limit	37 mg/m3 (15 ppm)	12 2008	OEL (QUE):Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Acetic acid	64-19-7	TWA : Time weighted average	25 mg/m3 (10 ppm)	12 2008	OEL (QUE):Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	liquid
Color	:	colourless
Odor	:	stinging
pH	:	Note: acidic
Melting point/range	:	16 °C
Boiling point/boiling range	:	118 °C at 1,013 hPa
Flash point	:	104 °F (40 °C) Method: DIN 51755
Flammability	:	Not applicable
Lower explosion limit	:	4 %(V)
Upper explosion limit	:	17 %(V)
Vapor pressure	:	16 hPa at 20 °C(68 °F) 74 hPa at 50 °C(122 °F)
Density	:	ca. 1.05 g/cm3 at 20 °C

Water solubility	:	Note: completely miscible
Partition coefficient: n-octanol/water	:	log Pow: -0.17
Ignition temperature	:	485 °C
Viscosity, dynamic	:	ca. 1.22 mPa.s at 20 °C
Molecular weight	:	60.05 g/mol

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerisation does not occur. Gives off hydrogen by reaction with metals.
Conditions to avoid	:	Heat, flames and sparks. Keep away from direct sunlight.
Incompatible materials to avoid	:	Strong bases Metals Amines Cyanides Sulphides Nitric acid Hydrogen peroxide, aqueous solution Alkaline carbonates
Hazardous decomposition products	:	In case of fire hazardous decomposition products may be produced such as: Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity
Acetic acid : LD50: 3,530 mg/kg
Species: Rat

Acute inhalation toxicity
Acetic acid : LC50: 11.4 mg/l
Exposure time: 4 h
Species: Rat

Acute dermal toxicity
Acetic acid : LD50: 1,060 mg/kg
Species: Rabbit

Skin irritation
Acetic acid : Species: Rabbit
Result: Causes burns.
Classification: Corrosive

Eye irritation
Acetic acid : Species: Rabbit
Result: Risk of serious damage to eyes.
Classification: Corrosive

Genotoxicity in vitro : Cell type: Chinese Hamster Ovary Cells
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 473

: Test Method: Ames test
Cell type: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 471

Genotoxicity in vivo : Test Method: Chromosome aberration test
Species: Rat
Method: Mutagenicity (micronucleus test)
Result: negative

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish	:	LC50: > 1,000 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) Test substance: REACH dossier “read-across” Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	static test LC50: > 1,000 mg/l Exposure time: 48 h Species: Daphnia (water flea) Test substance: REACH dossier “read-across” Method: OECD Test Guideline 202
Toxicity to algae	:	static test EC50: > 1,000 mg/l Exposure time: 72 h Species: Skeletonema costatum (marine diatom) Test substance: REACH dossier “read-across”

Elimination information (persistence and degradability)

Bioaccumulation	:	Note: Bioaccumulation is unlikely.

Further information on ecology

Ecotoxicology Assessment

Results of PBT assessment
This substance is not considered to be persistent, bioaccumulating and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	:	Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

TDG	UN/ID No.	:	UN 2789
	Proper shipping name	:	Acetic acid, glacial

	Class		8
	Packing group		II
	Hazard Labels		8 (3)
IATA	UN/ID No.	:	UN 2789
	Description of the goods	:	Acetic acid, glacial
	Class	:	8
	Packaging group	:	II
	Hazard Labels	:	8 (3)
	Packing instruction (cargo aircraft)	:	855
	Packing instruction (passenger aircraft)	:	851
	Packing instruction (passenger aircraft)	:	Y840
IMDG	UN/ID No.	:	UN 2789
	Description of the goods	:	Acetic acid, glacial
	Class	:	8
	Packaging group	:	II
	Hazard Labels	:	8 (3)
	EmS Number	:	F-E, S-C
	Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

Inventories

US. Toxic Substances Control Act	:	On TSCA Inventory
Australia. Industrial Chemical (Notification and Assessment) Act	:	On the inventory, or in compliance with the inventory
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)	:	All components of this product are on the Canadian DSL
Japan. Kashin-Hou Law List	:	On the inventory, or in compliance with the inventory
Korea. Toxic Chemical Control Law (TCCL) List	:	On the inventory, or in compliance with the inventory
Philippines. The Toxic Substances and Hazardous	:	On the inventory, or in compliance with the inventory

and Nuclear Waste Control Act

China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

National regulatory information

WHMIS

Components	:	Acetic acid	64-19-7

NPRI

Canadian National Pollutant Release Inventory (NPRI): No component is listed on NPRI.

SECTION 16. OTHER INFORMATION

		HMIS III	NFPA
Health hazard	:	3	3
Flammability	:	2	2
Physical Hazard	:	0	
Instability	:		0

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

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Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group