Material Safety Data Sheet
Muriatic acid

Version 1.1 Revision Date: 07/02/2014

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Muriatic acid
Product Use Description : industrial chemicalAcid.

Manufacturer or supplier's details

Company : Nexeo Solutions LLC
Address 3 Waterway Square Place Suite 1000
Woodlands, Tx. 77380

Emergency telephone number:
Health North America: 1-855-NEXEO4U (1-855-639-3642)
Health International: 1-855-NEXEO4U (1-855-639-3642)
Transport North America: CHEMTREC 800.424.9300

Additional Information: : Responsible Party: Product Safety Group
E-Mail: msds@nexeosolutions.com
MSDS Requests: 1-855-429-2661
MSDS Requests Fax: 1-281-500-2370
Website: www.nexeosolutions.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to metals : Category 1

Skin corrosion : Sub-category 1B

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS Label element

Hazard pictograms :

Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**
P234 Keep only in original container.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
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.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310 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 or doctor/ physician.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or antic-

ipated carcinogen by NTP.

Emergency Overview

Appearance	liquid
Colour	clear, colourless, white, yellow
Odour	characteristic, strong, pungent
Hazard Summary	No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

CAS-No.	Chemical Name	Concentration (%)
7647-01-0	Hydrochloric acid	20 - 36.99

Synonyms : Muriatic acid

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.

		Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5. FIREFIGHTING MEASURES

Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	No hazardous combustion products are known
Specific extinguishing methods	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up	:	Neutralize with chalk, alkali solution or ammonia. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Container may be opened only under exhaust ventilation hood. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
Materials to avoid	:	Do not store near acids.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
7647-01-0	Hydrochloric acid	C	2 ppm	ACGIH
		C	5 ppm 7 mg/m3	NIOSH REL
		C	5 ppm 7 mg/m3	OSHA Z-1

		C	5 ppm 7 mg/m3	OSHA P0

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

In the case of vapour formation use a respirator with an approved filter.

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: clear, colourless, white, yellow
Odour	: characteristic, strong, pungent
Odour Threshold	: 0.25 - 10 ppm
pH	: 1 @ 20 °C (68 °F)
Freezing Point (Melting point/range)	: -46 °C (-51 °F)
Boiling Point (Boiling point/boiling range)	: 100 °C (212 °F)
Flash point	: No data available

Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Burning rate	:	No data available
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	169 mmHg @ 20 °C (68 °F)
Relative vapour density	:	1.267
Relative density	:	1.16Reference substance: (water = 1)
Density	:	Estimated 9.663 lb/gal
Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Thermal decomposition	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization. Stable under recommended storage conditions.
Conditions to avoid	:	Avoid contact with: Heat, flames and sparks.

		Keep away from heat, flame, sparks and other ignition sources.
Hazardous decomposition products	:	hydrogen chloride Phosgene

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:

7647-01-0:

Acute oral toxicity	:	Assessment: The component/mixture is moderately toxic after single ingestion. Remarks: No data available
Acute inhalation toxicity	:	LC50 (rat, male): 8.3 mg/l Exposure time: 0.5 h Remarks: Acutely Toxic Category 3 Difficulty in breathing
Acute dermal toxicity	:	Assessment: The component/mixture is moderately toxic after single contact with skin. Remarks: No data available

Skin corrosion/irritation

Product:

Remarks: Extremely corrosive and destructive to tissue.

Components:

7647-01-0:

Species: rabbit
Classification: Causes burns.
Method: OECD Test Guideline 404
Result: Causes burns.
GLP: no
Remarks: Skin irritation, Category 1

Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Components:

7647-01-0:
Species: rabbit
Result: Risk of serious damage to eyes.
Classification: Risk of serious damage to eyes.
Method: OECD Test Guideline 405
GLP: no

Respiratory or skin sensitisation

Components:

7647-01-0:
Test Type: Maximization test
Species: guinea pig
Assessment: Does not cause skin sensitisation.
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.
GLP: no

Germ cell mutagenicity

Components:

7647-01-0:

Genotoxicity in vitro	:	Test Type: Mammalian cell gene mutation assay Test species: mouse lymphoma cells Metabolic activation: with and without metabolic activation Result: positive GLP: no
	:	Test Type: Chromosome aberration test in vitro Test species: Chinese hamster ovary (CHO) Metabolic activation: with and without metabolic activation Result: Ambiguous GLP: no
Germ cell mutagenicity-Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity

Components:

7647-01-0:
Species: rat, (male)
Application Route: Inhalation
Exposure time: 128 wk
Dose: 10 ppm
Frequency of Treatment: 6 h/d, 5 d/wk

Result: did not display carcinogenic properties
GLP: no

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Components:
7647-01-0:
Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

Reproductive toxicity - Assessment : Fertility classification not possible from current data. Embryotoxicity classification not possible from current data.

STOT - single exposure

Product:

No data available

Components:

No data available

STOT - repeated exposure

Product:

No data available

Components:

No data available

Repeated dose toxicity

Components:
7647-01-0:
Species: rat, male and female
NOAEL: 20
LOAEL: 50
Application Route: inhalation (gas)
Exposure time: 13 wk
Number of exposures: 6 h/d, 5 d/wk
Dose: 0, 10, 20, 50 ppm
Method: OECD Test Guideline 413
GLP: yes

Symptoms: death

Aspiration toxicity

Further information

Product:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:
7647-01-0:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 3.25 Exposure time: 96 h Test Type: semi-static test GLP: no
Toxicity to daphnia and other aquatic invertebrates	:	(Daphnia magna (Water flea)): 4.92 Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae	:	(Chlorella vulgaris (Fresh water algae)): 4.7 End point: Growth rate Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes

Persistence and degradability

Components:
7647-01-0:
Biodegradability : Remarks: No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects
No data available

Product:

Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact NEXEO's Environmental Services Group at 800-637-7922.

Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

IATA (International Air Transport Association): UN1789, Hydrochloric acid, 8 , II

IMDG (International Maritime Dangerous Goods): UN1789, HYDROCHLORIC ACID, 8, II

DOT (Department of Transportation): UN1789, Hydrochloric acid, 8, II

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Corrosive to skin, Severe eye irritant, Severe respiratory irritant

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Hydrochloric acid	7647-01-0	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

7647-01-0 Hydrochloric acid 36.99 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

7647-01-0 Hydrochloric acid 36.99 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

7647-01-0 Hydrochloric acid 36.99 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

7647-01-0	Hydrochloric acid	30 - 50 %

Pennsylvania Right To Know

7732-18-5	Water	70 - 90 %
7647-01-0	Hydrochloric acid	30 - 50 %

New Jersey Right To Know

7732-18-5	Water	70 - 90 %
7647-01-0	Hydrochloric acid	30 - 50 %

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

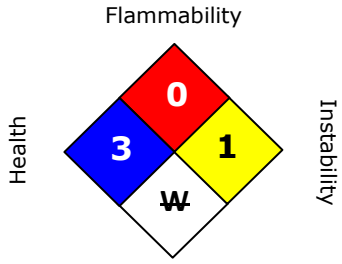
1907/2006 (EU)	:	n (Negative listing) (Not in compliance with the inventory)
Switzerland. New notified substances and declared preparations	:	y (positive listing) (The formulation contains substances listed on the Swiss Inventory)
United States TSCA Inventory	:	y (positive listing) (On TSCA Inventory)
Canadian Domestic Substances List (DSL)	:	y (positive listing) (All components of this product are on the Canadian DSL.)
Australia Inventory of Chemical Substances (AICS)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
New Zealand. Inventory of Chemical Substances	:	n (Negative listing) (On the inventory, or in compliance with the inventory)
Japan. ENCS - Existing and New Chemical Substances Inventory	:	n (Negative listing) (Not in compliance

		with the inventory)
Japan. ISHL - Inventory of Chemical Substances (METI)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Korea. Korean Existing Chemicals Inventory (KECI)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
China. Inventory of Existing Chemical Substances in China (IECSC)	:	y (positive listing) (On the inventory, or in compliance with the inventory)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	**3**
FLAMMABILITY	**0**
PHYSICAL HAZARD	**1**

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 =Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to

confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by NEXEO™ Solutions EHS Product Safety Department (1-855-429-2661) MSDS@nexeosolutions.com.

Material number:
16058099, 16058098, 16058097

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philipines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Compositon, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50		Lethal Concentration 50%	