



SAFETY DATA SHEET

LIQUICLEAN 113

1. Identification

Product identifier	LIQUICLEAN 113
Other means of identification	None.
Recommended use	Membrane cleaner
Recommended restrictions	None known.

Company/undertaking identification

Veolia WTS USA, Inc.
3600 Horizon Blvd.
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention	Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep 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. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Citric acid	77-92-9	10 - 20
Formic acid	64-18-6	2.5 - 10
Hydroxyacetic acid	79-14-1	2.5 - 10
N-hydroxyethylenediamine triacetic acid trisodium salt	139-89-9	2.5 - 10

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Formic acid (CAS 64-18-6)	PEL	9 mg/m ³
		5 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Formic acid (CAS 64-18-6)	STEL	10 ppm
	TWA	5 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Formic acid (CAS 64-18-6)	TWA	9 mg/m ³
		5 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Provide adequate ventilation. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. A respiratory protection program that meets OSHA's 29 CFR 1910.34 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Liquid

Physical state

Liquid.

Form

Not available.

Color	Pale yellow
Odor	Mild
Odor threshold	Not available.
pH (concentrated product)	2.71 Neat
Melting point/freezing point	16 °F (-9 °C)
Initial boiling point and boiling range	Not available.
Flash point	> 239 °F (> 115 °C)
Evaporation rate	Slower than Ether
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mmHg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1
Relative density	1.15
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	5 mPa.s
Viscosity temperature	77 °F (25 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
pH in aqueous solution	3.05 (2% Solution)
Pour point	21 °F (-6 °C)
VOC	0 % ESTIMATED

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects**Acute toxicity** Causes severe skin burns and eye damage.

Product	Species	Test Results
LIQUICLEAN 113		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg (Calculated according to GHS additivity formula)
Inhalation		
<i>Mist</i>		
LC50	Rat	> 5 mg/l, 4 Hour (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg (Calculated according to GHS additivity formula)

Components	Species	Test Results
Citric acid (CAS 77-92-9)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
LD50	Rat	5400 mg/kg
Formic acid (CAS 64-18-6)		
Acute		
Inhalation		
LC50	Rat	15 mg/l, 4 Hour
Oral		
LD50	Rat	1100 mg/kg
Hydroxyacetic acid (CAS 79-14-1)		
Acute		
Inhalation		
LC50	Rat	3.6 mg/L, 4 Hour
Oral		
LD50	Rat	2040 mg/kg
N-hydroxyethylenediamine triacetic acid trisodium salt (CAS 139-89-9)		
Acute		
Inhalation		
LC50	Rat	> 10.05 mg/l, 4 Hour
Oral		
LD50	Rat	1780 mg/kg

Skin corrosion/irritation Causes severe skin burns and eye damage.**Serious eye damage/eye irritation** Causes serious eye damage.**Respiratory or skin sensitization****Respiratory sensitization** This product is not expected to cause respiratory sensitization.**Skin sensitization** This product is not expected to cause skin sensitization.**Germ cell mutagenicity** Not classified.**Carcinogenicity** Not classified.**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not classified.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
Aquatic			
Crustacea	LC50	Daphnia magna	1265 mg/L, 48 H (pH adjusted)
	NOEL	Daphnia magna	1000 mg/L, 48 H (pH adjusted)
Fish	LC50	Fathead Minnow	2634.3 mg/L, 96 H (pH adjusted)
		Rainbow Trout	3567.6 mg/L, 96 H (pH adjusted)
	NOEL	Fathead Minnow	2000 mg/L, 96 H (pH adjusted)
		Rainbow Trout	1500 mg/L, 96 H (pH adjusted)

Persistence and degradability

- COD (mgO ₂ /g)	232 (calculated data)
- BOD 5 (mgO ₂ /g)	77 (calculated data)
- BOD 28 (mgO ₂ /g)	107 (calculated data)
- Closed Bottle Test (% Degradation in 28 days)	46 (calculated data)
- TOC (mg C/g)	116 (calculated data)

Bioaccumulative potential

Partition coefficient n-octanol / water (log K_{ow})

Citric acid	-1.64
Formic acid	-0.54
Hydroxyacetic acid	-1.11

Bioconcentration factor (BCF)

Citric acid	3
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Mobility in soil No data available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (FORMIC ACID, Hydroxyacetic acid)

Material name: LIQUICLEAN 113

Version number: 1.1

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 153

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN3265

UN proper shipping name Corrosive liquid, acidic, organic, n.o.s. (FORMIC ACID, Hydroxyacetic acid)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards No.

ERG Code 153

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN3265

UN proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (FORMIC ACID, Hydroxyacetic acid)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards

Marine pollutant No.

EmS F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Formic acid (CAS 64-18-6) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Corrosive to metal
Skin corrosion or irritation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Formic acid	64-18-6	2.5 - 10

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date	Aug-22-2023
Revision date	Aug-22-2023
Version #	1.1
NFPA ratings	Health: 3 Flammability: 0 Instability: 0

NFPA ratings**List of abbreviations**

ACGIH: American Conference of Governmental Industrial Hygienists
BOD: Biochemical Oxygen Demand
CAS: Chemical Abstract Service Registration Number
COD: Chemical Oxygen Demand
DOT: Department of Transportation (49 CFR 172.101).
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IARC: International Agency for Research on Cancer.
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LC50: Lethal Concentration, 50%
LD50: Lethal Dose, 50%
NOEL: No Observed Effect Level
OSHA: Occupational Safety & Health Administration.
STEL: Short Term Exposure Limit
TOC: Total Organic Carbon
TWA: Time Weighted Average
NFPA: National Fire Protection Association

References:

No data available

Disclaimer

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.

Revision information

Product and Company Identification: Commercial Names

Prepared by

This SDS has been prepared by Veolia Water Technologies & Solutions' Regulatory Department (1-215-355-3300).