

Issue Date: 25-Mar-2020

Revision Date: 25-Mar-2020

SDS Number US-8999 Version 1.1

1. IDENTIFICATION

Product identifier

Product Name

LIQUIFI™ Pandemic Emergency Response Formula™

Other means of identification

SDS #

US-8999

Product Code

Formula Science Product # 8999

Recommended use of the chemical and restrictions on use

Recommended Use

100% active formula exceeds CDC 2020 pandemic response directives for surface decontamination formulations. Suitable for hospital use to decontaminate surfaces in waiting area, wheelchairs, E/R, patient room, operating room, bed, morgue, laundry, kitchen, nurse stations and locker areas. Decontaminate textiles by first washing normally, then washing with only **LIQUIFI™** no other chemicals. For use prior to validation of critical cleanroom environments and to maintain ISO Classification. Use to decontaminate surfaces of transportation vehicles including ambulance, taxis, aircraft, vessels, trains, buses, and spacecraft. Decontaminates high-risk TSA conveyor bins, Customs, and baggage areas, hand rails, que barriers and ticketing machines.

Uses Advised Against

Do not mix with other chemicals. Do not use where vapors can concentrate. Do not use where an ignition source exists that can ignite flammable vapor.

Details of the supplier of the safety data sheet

Manufacturer's Information:

Formula Science Corporation

Post Office Box 2441, Alpharetta, Georgia, 30023-2441 USA

Non-Emergency Sales Telephone: 770-664-1225

Email: Sales@FormulaScience.com

Emergency telephone number

24-Hour Emergency Telephone CALL INFOTRAC in USA 1-800-535-5053

All International Callers +1-352-323-3500

2. HAZARDS IDENTIFICATION

Appearance: According to Product Specification

Physical state: Liquid

Odor: Sweet, alcohol-like

Classification

Serious eye damage/eye irritation

Category 2

Specific target organ toxicity (single exposure)

Category 3

Flammable liquids

Category 2

Signal Word

DANGER

Hazard statements

Causes serious eye irritation

May cause drowsiness or dizziness

Highly flammable liquid and vapor

Hazard Pictograms



Precautionary Statements – Prevention

Wear protective gloves/protective clothing/eye protection/face protection
 Wash face, hands and any exposed skin thoroughly after handling
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking
 Keep container tightly closed
 Ground/bond container and receiving equipment
 Use explosion-proof equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge

Precautionary Statements – Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention

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
 Call a poison center or doctor/physician if you feel unwell

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

IN CASE OF FIRE: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

Precautionary Statements – Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed
 Keep cool

Precautionary Statements – Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards

Harmful to aquatic life with long lasting effects

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	C.A.S. Number	Weight %
Solvent 1	Proprietary	>70
Denaturation agent	Proprietary	<8
Solvent 2	Proprietary	1-5
Solvent 3	Proprietary	1-5
Solvent 4	Proprietary	1-5

**If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret. **

4. FIRST AID MEASURES

Description of first aid measures**General Advice**

In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible)

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention

Skin Contact

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

Most important symptoms and effects, both acute and delayed

Symptoms Causes serious eye irritation. May cause drowsiness or dizziness.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically and supportively

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry sand. Dry chemical. Alcohol resistant foam

Unsuitable Extinguishing Media Typical firefighting foam may be ineffective due to alcohol content

Specific Hazards Arising from the Chemical

Highly flammable liquid and vapor. Vapors are heavier than air and may accumulate in low areas or areas inadequately ventilated. Vapors may also travel along the ground to be ignited at location distant from handling site; flashback of flame to handling site may occur. Never use welding or cutting torch on or near drum (even empty), because product (even just residue) can ignite explosively.

Hazardous combustion products Smoke, fumes or vapors, and oxides of carbon

Explosion Data

Sensitivity to Mechanical Impact Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite/explode.

Sensitivity to Static Discharge Take precautionary measures against static discharge.

Protective equipment and precautions for firefighters

As for fire. wear self-contained breathing apparatus pressure-demand MSHA/NIOSH approved or equivalent & full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions Use personal protective equipment as required.

For Emergency Responders Use personal protection recommended in Section 8. Remove all sources of ignition.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Soak up with inert absorbent material. Use clean non-sparking tools to collect absorbed material. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling Wear protective gloves/protective clothing and eye/face protection. Wash face, hands and any exposed skin thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/ spray. Use only outdoors or in a well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion proof equipment. Use only non-sparking tools. Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities**Storage Conditions**

Store in a cool, dry, well-ventilated place. Keep container tightly closed. Store locked up.

Incompatible Materials

Strong oxidizing agents, chlorine bleach

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure Guidelines**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Solvent 1	STEL: 400 (ppm) TWA: 200 (ppm)	TWA: 400 (ppm) TWA: 980 (mg/m ₃) (vacated) TWA: 400 (ppm) (vacated) TWA: 980 (mg/m ₃) (vacated) STEL: 500 (ppm) (vacated) STEL: 1225 (mg/m ₃)	IDLH: 2000 (ppm) TWA: 400 (ppm) TWA: 980 (mg/m ₃) STEL: 500 (ppm) STEL: 1225 (mg/m ₃)
Denaturation agent	TWA: 1 (ppm)	TWA: 1 (ppm) TWA: 1.4 (mg/m ₃) (vacated) TWA: 1 (ppm) (vacated) TWA: 1.4 (mg/m ₃)	IDLH: 75 (ppm) TWA: 1 (ppm) TWA: 1.4 (mg/m ₃)
Solvent 3	STEL: 1000 (ppm)	TWA: 1000 (ppm) TWA: 1900 (mg/m ₃) (vacated) TWA: 1000 (ppm) (vacated) TWA: 1900 (mg/m ₃)	IDLH: 3300 (ppm) TWA: 1000 (ppm) TWA: 1900 (mg/m ₃)
Solvent 2	STEL: 150 (ppm) TWA: 100 (ppm)	TWA: 200 (ppm) TWA: 840 (mg/m ₃) (vacated) TWA: 200 (ppm) (vacated) TWA: 840 (mg/m ₃) (vacated) STEL: 250 (ppm) (vacated) STEL: 1050 (mg/m ₃)	IDLH: 1700 (ppm) TWA: 200 (ppm) TWA: 840 (mg/m ₃) STEL: 250 (ppm) STEL: 1050 (mg/m ₃)
Solvent 4	TWA: 20 (ppm)	TWA: 50 (ppm) TWA: 240 (mg/m ₃) (vacated) TWA: 25 (ppm) (vacated) TWA: 120 (mg/m ₃) (vacated) S* S*	IDLH: 700 (ppm) TWA: 5 (ppm) TWA: 24 (mg/m ₃)

Appropriate engineering controls**Engineering Controls**

Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment**Eye/Face Protection**

Wear safety glasses with side shields (or goggles). Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection

Wear protective gloves and protective clothing. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

Respiratory Protection

Ensure adequate ventilation, especially in confined areas. Refer to 29 CFR 1910.134 for respiratory protection requirements.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Alcohol-Like
Appearance According to product specification		Odor Threshold	Not determined
Color	Clear		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7.2	
Melting point / freezing point	-89°C / -128°F	
Boiling point / boiling range	83°C / 181°F	
Flash point	18°C / 65°F	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not Determined	
Flammability Limit in Air		
Upper flammability or explosive limits		
Lower flammability or explosive limits		
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	Not determined	
Water Solubility	Not Determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Autoignition temperature	Not determined	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties		Not determined
Oxidizing Properties		Not determined

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to Avoid

Keep out of reach of children.

Incompatible materials

Strong oxidizing agents.

Hazardous decomposition products

Smoke, fumes or vapors, and oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Causes serious eye irritation.
Skin Contact	Avoid contact with skin.
Inhalation	May cause drowsiness or dizziness.
Ingestion	Do not ingest.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Solvent 1	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	= 72600 mg/m ³ (Rat) 4 h
Denaturation agent	= 1518 mg/kg (Rat)	= 9200 mg/kg (Rabbit)	= 2000 mg/m ³ (Rat) 4 h
Solvent 3	= 7060 mg/kg (Rat)	-	= 124.7 mg/L (Rat) 4 h
Solvent 2	= 8700 mg/kg (Rat)	> 17756 mg/kg (Rabbit)	-
Solvent 4	= 470 mg/kg (Rat)	= 435 mg/kg (Rabbit)	= 486 (ppm) (Rat) 4h = 450 (ppm) (Rat) 4h

Symptoms related to the physical, chemical and toxicological characteristics**Symptoms**

Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Carcinogenicity**

Solvent 3 has been shown to be carcinogenic in long-term studies only when consumed as an alcoholic beverage. Solvent 1 is listed as an IARC Monograph Group 3 chemical. However, IARC Group 3 chemicals are "not classifiable as human carcinogens". Solvent 1 is classified as an IARC Group 1 chemical ONLY when manufactured by the strong-acid process. Solvent 1 in this product is NOT manufactured by the strong-acid process and is therefore not classifiable as a human carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Solvent 1		Group 3		X
Denaturation agent	A3	Group 3		
Solvent 3	A3	Group 1	Known	X
Solvent 4	A3	Group 3		

LEGEND**ACGIH (American Conference of Governmental Industrial Hygienists)**

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X = Present

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

Oral LD50 2,242.61 mg/kg

Dermal LD50 5,108.00 mg/kg

ATEmix (inhalation-dust/mist) 15.80 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Solvent 1	1000: 72 h <i>Desmodesmus subspicatus</i> (mg/L) EC50 1000: 96 h <i>Desmodesmus subspicatus</i> (mg/L) EC50	9640: 96 h <i>Pimephales promelas</i> (mg/L) LC50 flow-through 11130: 96 h <i>Pimephales promelas</i> (mg/L) LC50 static 1400000: 96 h <i>Lepomis macrochirus</i> µg/L LC50	13299: 48 h <i>Daphnia magna</i> (mg/L) EC50
Denaturation agent	2.5: 72 h <i>Chlorella vulgaris</i> (mg/L) EC50	16.4: 96 h <i>Pimephales promelas</i> (mg/L) LC50 10.0 - 32.0: 96 h <i>Oncorhynchus mykiss</i> (mg/L) LC50 static 18 - 56: 96 h <i>Lepomis macrochirus</i> (mg/L) LC50 static	7.7: 24 h <i>Daphnia magna</i> (mg/L) EC50 18 - 32: 48 h <i>Daphnia magna</i> (mg/L) EC50 Static
Solvent 3		13400 - 15100: 96 h <i>Pimephales promelas</i> (mg/L) LC50 flow-through 12.0 - 16.0: 96 h <i>Oncorhynchus mykiss</i> mL/L LC50 static 100: 96 h <i>Pimephales promelas</i> (mg/L) LC50 static	10800: 24 h <i>Daphnia magna</i> (mg/L) EC50 2: 48 h <i>Daphnia magna</i> (mg/L) EC50 Static 9268 - 14221: 48 h <i>Daphnia magna</i> (mg/L) LC50
Solvent 2		56 - 64: 96 h <i>Pimephales promelas</i> (mg/L) LC50 static 56 - 64: 96 h <i>Pimephales promelas</i> (mg/L) LC50 flow-through	318: 24 h <i>Daphnia magna</i> (mg/L) EC50
Solvent 4		2950: 96 h <i>Lepomis macrochirus</i> (mg/L) LC50 1490: 96 h <i>Lepomis macrochirus</i> (mg/L) LC50 static	1000: 48 h <i>Daphnia magna</i> (mg/L) EC50 1698 - 1940: 24 h <i>Daphnia magna</i> (mg/L) EC50

Persistence/Degradability

Not Determined

Bioaccumulation

There is no data for this product.

Mobility

Chemical name	Partition coefficient
Solvent 1	0.05
Solvent 3	-0.32
Solvent 4	0.81

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

Dispose in accordance with applicable regional, national & local laws & regulations.

Contaminated Packaging

Dispose in accordance with applicable regional, national & local laws & regulations.

California Hazardous Waste Status

Chemical name	California Hazardous Waste Status
Solvent 1	Toxic Ignitable
Denaturation agent	Toxic Corrosive Ignitable Reactive
Solvent 2	Toxic Ignitable
Solvent 3	Toxic Ignitable

14. TRANSPORT INFORMATION

Note

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

Please contact manufacturer.

IATA

Please contact manufacturer.

IMDG

Please contact manufacturer.

15. REGULATORY INFORMATION

International Inventories

Chemical name	TSC A	TSCA Inventory Status	DSL/NDSL L	EINECS/ ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Solvent 1	X	ACTIVE	X	X	X	X	X	X	X
Denaturation agent	X	ACTIVE	X	X	X	X	X	X	X
Solvent 3	X	ACTIVE	X	X	X	X	X	X	X
Solvent 2	X	ACTIVE	X	X	X	X	X	X	X
Solvent 4	X	ACTIVE	X	X	X	X	X	X	X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Chemical name	Hazardous Substances (RQs)	CERCLA/SARA (RQ)	Reportable Quantity (RQ)
Denaturation agent		1000 Pounds	

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	CAS Number	Weight (%)	SARA 313 - Threshold Values (%)
Solvent 1	Proprietary	>70	1.0
Solvent 4	Proprietary	1-5	1.0

CWA (Clean Water Act)

This product does not contain a substance regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 & 40 CFR 122.42)

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Solvent 3	Carcinogen Developmental

U.S. State Right-to-Know Regulations

This product contains the following substance(s) regulated under applicable state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Solvent 1	X	X	X
Denaturation agent	X	X	X
Solvent 3	X	X	X
Solvent 2	X	X	X

16. OTHER INFORMATION**NFPA**

Health Hazards
Not Determined

Flammability
Not Determined

Instability
Not Determined

Special Hazards
Not Determined

HMIS

Health Hazards
Not Determined

Flammability
Not Determined

Physical hazards
Not Determined

Personal Protection
Not Determined

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Revision Note: New product

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.

End of Safety Data Sheet