Safety Data Sheet
SAFENET FLUSH

Safety Data Sheet dated 2/6/2023, version 1.0
This version cancels and substitutes any previous version

1. IDENTIFICATION

Product identifier

Mixture identification:

Trade name: SAFENET FLUSH

Recommended use of the chemical and restrictions on use

Recommended use:

Flushing fluid for A/C systems

Restrictions on use:

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Responsible party:

ERRECOM USA LLC
1900 North Bayshore Drive 1A Suite 129
33132 Miami - FLORIDA
+1 786 7967862

Manufacturer:

ERRECOM SPA
Via Industriale, 14
25030 Corzano (BS) Italy

Competent person responsible for the safety data sheet:

lab@errecom.it

Emergency phone number

+1 786 7967862 (Mo-Fr, 02h30-06h00, 07h30-12h00 UTC -05:00)

2. HAZARD(S) IDENTIFICATION

Classification of the chemical


Danger, Asp. Tox. 1, May be fatal if swallowed and enters airways.


Warning, Skin Irrit. 2, Causes skin irritation.


Warning, Eye Irrit. 2A, Causes serious eye irritation.


Warning, Skin Sens. 1, May cause an allergic skin reaction.


Warning, Carc. 2, Suspected of causing cancer.


Warning, STOT SE 3, May cause drowsiness or dizziness.


Aquatic Chronic 2, Toxic to aquatic life with long lasting effects.

Label elements

Hazard pictograms:

Danger

Hazard statements:

H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing spray.
P264 Wash the parts that come into contact thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with soap and plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P312 Call a doctor if you feel unwell.
P321 Specific treatment (see First Aid information on Section 4 of the SDS and/or on this label).
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

None

Hazards not otherwise classified identified during the classification process:

None

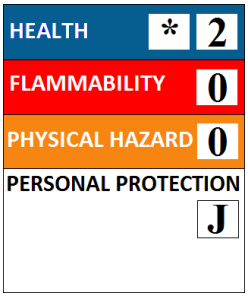
Ingredient(s) with unknown acute toxicity:

None.

Additional classification information

NFPA rating:

HMIS rating:



3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

N.A.

Mixtures

Hazardous components within the meaning of 29 CFR 1910.1200 and related classification:

Qty	Name	Ident. Number	Classification
>= 70% - < 80%	tetrachloroethylene	Index number: 602-028-00-4 CAS: 127-18-4 EC: 204-825-9 REACH No.: 01-21194753 29-28-XXXX	A.2/2 Skin Irrit. 2 H315 A.3/2A Eye Irrit. 2A H319 A.4.2/1 Skin Sens. 1 H317 A.8/3 STOT SE 3 H336 A.6/2 Carc. 2 H351 US-HAE/C2 Aquatic Chronic 2 H411
>= 7% - < 10%	Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics	EC: 927-241-2 REACH No.: 01-21194718 43-32-XXXX	B.6/3 Flam. Liq. 3 H226 A.10/1 Asp. Tox. 1 H304 A.8/3 STOT SE 3 H336 US-HAE/C3 Aquatic Chronic 3 H412
>= 0.25% - < 0.5%	1,2-epoxybutane	Index number: 603-102-00-9 CAS: 106-88-7 EC: 203-438-2 REACH No.: 01-21194491 61-46-XXXX	B.6/2 Flam. Liq. 2 H225 A.6/2 Carc. 2 H351 A.1/4/Oral Acute Tox. 4 H302 A.1/4/Dermal Acute Tox. 4 H312 A.1/4/Inhal Acute Tox. 4 H332 A.8/3 STOT SE 3 H335 A.2/2 Skin Irrit. 2 H315 A.3/2B Eye Irrit. 2B H320
>= 0.1% - < 0.25%	nitrogen	CAS: 7727-37-9 EC: 231-783-9	B.5/C Compr. Gas H280

4. FIRST-AID MEASURES

Description of necessary measures

In case of skin contact:

Immediately take off all contaminated clothing.

After contact with skin, wash immediately with soap and plenty of water.
Wash contaminated clothing before using them.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.
Protect uninjured eye.

In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

Most important symptoms/effects, acute and delayed

No information available.

Indication of immediate medical attention and special treatment needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Treatment:
No information available.
Physician should treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

CO_2 or Dry chemical fire extinguisher.
Foam fire extinguisher.

Unsuitable extinguishing media:

High pressure water jet.

Specific hazards arising from the chemical

Do not inhale explosion and combustion gases.
Burning produces heavy smoke.

Hazardous combustion products:

No information available.

Explosive properties: N.A.
Oxidizing properties: N.A.

Special protective equipment and precautions for fire-fighters

Cool the containers with jets of water to avoid the decomposition of the product and the development of substances potentially dangerous for health. Always wear full fire protection equipment.
Collect the extinguishing waters that must not be discharged into the drains. Dispose of contaminated water used for extinction and fire residue according to current regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures

Wear personal protection equipment.
Remove persons to safety.
See protective measures under point 7 and 8.

Methods and materials for containment and cleaning up

Wash with plenty of water.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Advice on general occupational hygiene:
Contamined clothing should be changed before entering eating areas.
Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities
Always keep in a well ventilated place.
Keep away from food, drink and feed.
Incompatible materials:
See subsection 10.5
Instructions as regards storage premises:
Cool and adequately ventilated.
Storage temperature:
Store at room temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
tetrachloroethylene - CAS: 127-18-4
AGW - TWA(8h): 69 mg/m3, 10 ppm - STEL(15min): 138 mg/m3, 20 ppm - Notes: Skin
VLA - TWA(8h): 138 mg/m3, 20 ppm - STEL(15min): 275 mg/m3, 40 ppm - Notes: Skin
VLEP - TWA(8h): 138 mg/m3, 20 ppm - STEL(15min): 275 mg/m3, 40 ppm
WEL - TWA(8h): 138 mg/m3, 20 ppm - STEL(15min): 275 mg/m3, 40 ppm - Notes: Skin
TLV (GR) - TWA(8h): 138 mg/m3, 20 ppm - STEL(15min): 275 mg/m3, 40 ppm - Notes: Skin
NDS - TWA(8h): 85 mg/m3 - STEL(15min): 170 mg/m3 - Notes: Skin
NGV/KGV - TWA(8h): 70 mg/m3, 10 ppm - STEL(15min): 170 mg/m3, 25 ppm - Notes: Skin
GVI/KGVI - TWA(8h): 138 mg/m3, 20 ppm - STEL(15min): 275 mg/m3, 40 ppm - Notes: Skin
EU - TWA(8h): 138 mg/m3, 20 ppm - STEL: 275 mg/m3, 40 ppm - Notes: Skin
TLV (BG) - TWA(8h): 138 mg/m3, 20 ppm - STEL(15min): 275 mg/m3, 40 ppm - Notes: Skin
TLV (CZ) - TWA(8h): 138 mg/m3, 20.01 ppm - STEL(15min): 275 mg/m3, 39.875 ppm - Notes: Skin
TLV (EST) - TWA(8h): 70 mg/m3, 10 ppm - STEL(15min): 170 mg/m3, 25 ppm - Notes: Skin
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics
TLV - TWA(8h): 1700 mg/m3 - Notes: ACGIH
nitrogen - CAS: 7727-37-9
ACGIH - Notes: (D) - Asphyxia
DNEL Exposure Limit Values
tetrachloroethylene - CAS: 127-18-4
Consumer: 138 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, local effects
Worker Professional: 275 mg/m³ - Consumer: 138 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, systemic effects
Worker Professional: 275 mg/m³ - Consumer: 138 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, local effects
Consumer: 1.3 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects
Worker Professional: 39.4 mg/kg - Consumer: 23 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Worker Professional: 138 mg/m³ - Consumer: 34.5 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Consumer: 46 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects
Worker Professional: 871 mg/m³ - Consumer: 185 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 77 mg/kg - Consumer: 46 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

tetrachloroethylene - CAS: 127-18-4

Target: Soil (agricultural) - Value: 0.01 mg/kg
Target: Fresh Water - Value: 0.051 mg/L
Target: Marine water - Value: 0.0051 mg/L
Target: Marine water sediments - Value: 0.0903 mg/kg
Target: Microorganisms in sewage treatments - Value: 11.2 mg/L
Target: Aquatic, periodic release - Value: 0.0364 mg/L

Appropriate engineering controls:

None

Individual protection measures

Eye protection:

Protective airtight goggles (ref. Standard EN 166).

Protection for skin:

Overall.

Protection for hands:

Suitable gloves type:
work gloves resistant to penetration (ref. standard EN 374).
Suitable material:
NBR (nitrile rubber).
Material thickness: 0.4 mm minimum.
Break through time : > 480 min
Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.
Mask with filter "AX", brown colour

Thermal Hazards:

None

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and colour:	Liquid,Colourless
Odour:	characteristic
Odour threshold:	N.A.
pH:	N.A.
Melting point / freezing point:	N.A.
Initial boiling point and boiling range:	N.A.
Solid/gas flammability:	N.A.
Upper/lower flammability or explosive limits:	N.A.
Vapour density:	N.A.
Flash point:	N.A.
Evaporation rate:	N.A.
Vapour pressure:	N.A.
Density:	1.33 g/mL (20 °C / 68 °F)
Solubility in water:	N.A.
Solubility in oil:	N.A.
Partition coefficient (n-octanol/water):	N.A.
Auto-ignition temperature:	N.A.

Decomposition temperature:	N.A.
Viscosity:	N.A.
Miscibility:	N.A.
Fat Solubility:	N.A.
Conductivity:	N.A.
Substance Groups relevant properties	N.A.

10. STABILITY AND REACTIVITY

Reactivity
Stable under normal conditions
Chemical stability
Stable under normal conditions
Possibility of hazardous reactions
None
Conditions to avoid
Avoid extreme heat and high-energy ignition sources.
Incompatible materials
Information not available.
Hazardous decomposition products
No data available

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Toxicological information of the product:
SAFENET FLUSH
a) acute toxicity
Not classified
Based on available data, the classification criteria are not met
b) skin corrosion/irritation
The product is classified: Skin Irrit. 2 H315
c) serious eye damage/irritation
The product is classified: Eye Irrit. 2A H319
d) respiratory or skin sensitisation
The product is classified: Skin Sens. 1 H317
e) germ cell mutagenicity
Not classified
Based on available data, the classification criteria are not met
f) carcinogenicity
The product is classified: Carc. 2 H351
g) reproductive toxicity
Not classified
Based on available data, the classification criteria are not met
h) STOT-single exposure
The product is classified: STOT SE 3 H336
i) STOT-repeated exposure
Not classified
Based on available data, the classification criteria are not met
j) aspiration hazard
The product is classified: Asp. Tox. 1 H304
Toxicological information of the main substances found in the product:
tetrachloroethylene - CAS: 127-18-4
a) acute toxicity:
Test: LC50 - Route: Inhalation - Species: Rat 4000 ppm - Duration: 4h
Test: LD50 - Route: Oral - Species: Rat 3500 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 1000 mg/kg
Test: LC50 - Route: Inhalation - Species: Rat > 3786 ppm - Duration: 4h
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit > 5000 mg/kg
Test: LC50 - Route: Inhalation Vapour - Species: Rat > 4951 mg/m3 - Duration: 4h

Substance(s) listed on the NTP report on Carcinogens:
tetrachloroethylene.
Substance(s) listed on the IARC Monographs:
tetrachloroethylene - Group 2A
1,2-epoxybutane - Group 2B.
Substance(s) listed as OSHA Carcinogen(s):
None.
Substance(s) listed as NIOSH Carcinogen(s):
tetrachloroethylene.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Adopt good working practices, so that the product is not released into the environment.
SAFENET FLUSH
The product is classified: Aquatic Chronic 2 - H411
tetrachloroethylene - CAS: 127-18-4
a) Aquatic acute toxicity:
Endpoint: EC50 - Species: Daphnia 8.5 mg/L - Duration h: 48 - Notes: Species: Daphnia magna
Endpoint: LC50 - Species: Fish 5 mg/L - Duration h: 96 - Notes: Species: Oncorhyncus mykiss
Endpoint: EC50 - Species: Algae 3.64 mg/L - Duration h: 72 - Notes: Species: Chlamydomas reinharditi
b) Aquatic chronic toxicity:
Endpoint: NOEC - Species: Fish 1.99 mg/L - Duration h: 240 - Notes: Species: Jordanella floridae
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish > 10 mg/L - Duration h: 96 - Notes: Species: Oncorhynchus mykiss
Endpoint: EC50 - Species: Algae > 1000 mg/L - Duration h: 72 - Notes: Species: Pseudokirchneriella subcapitata
Endpoint: EC50 - Species: Daphnia > 22 mg/L - Duration h: 48 - Notes: Species: Daphnia magna
Persistence and degradability
tetrachloroethylene - CAS: 127-18-4
Biodegradability: Non-readily biodegradable - Test: Solubility in water - Notes: 150 mg/L
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics
Biodegradability: Readily biodegradable - Test: Biodegradation (%): - Duration: 28 d - %: 77 - Notes: oxygen consumption
Bioaccumulative potential
tetrachloroethylene - CAS: 127-18-4
Bioaccumulation: Very low bioaccumulative - Test: Kow - Partition coefficient 2.53
Bioaccumulation: Very low bioaccumulative - Test: BCF - Bioconcentrantion factor 49
Mobility in soil

tetrachloroethylene - CAS: 127-18-4
Test: Partition coefficient: Soil / water 2.15
Other adverse effects
None

13. DISPOSAL CONSIDERATIONS

Waste treatment and disposal methods
Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

14. TRANSPORT INFORMATION

UN number

DOT-UN number:	1950
ADR-UN number:	1950
IATA-Un number:	1950
IMDG-Un number:	1950

UN proper shipping name

DOT-Shipping Name:	Aerosols, non-flammable
ADR-Shipping Name:	AEROSOLS
IATA-Shipping Name:	Aerosols, non-flammable
IMDG-Shipping Name:	AEROSOLS

Transport hazard class(es)

DOT-Class:	2.2
ADR-Class:	2
ADR-Label:	2.2
IATA-Class:	2.2
IMDG-Class:	2.2

Packing group
N.A.
Environmental hazards
Marine pollutant: Marine pollutant
Most important toxic component: tetrachloroethylene
N.A.
Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)
N.A.
Special precautions
ADR-Transport category (Tunnel restriction code): E

IATA-Passenger Aircraft:	Y203
IATA-Cargo Aircraft:	Y203
IMDG-Shipping Name:	AEROSOLS
IMDG-EMS:	F-D, S-U

N.A.

15. REGULATORY INFORMATION

USA - Federal regulations
TSCA - Toxic Substances Control Act
TSCA inventory: all the components are listed on the TSCA inventory.
TSCA listed substances:
tetrachloroethylene is listed in TSCA Section 8b, Section 8d HSDR, Section 8a - CAIR
1,2-epoxybutane is listed in TSCA Section 8b, Section 8d HSDR
nitrogen is listed in TSCA Section 8b.
SARA - Superfund Amendments and Reauthorization Act
Section 302 – Extremely Hazardous Substances: no substances listed.
Section 304 – Hazardous substances: tetrachloroethylene, 1,2-epoxybutane.

Section 313 – Toxic chemical list: tetrachloroethylene, 1,2-epoxybutane.

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

Substance(s) listed under CERCLA: tetrachloroethylene - Reportable quantity: 100 pounds

1,2-epoxybutane - Reportable quantity: 100 pounds.

Reportable quantity for mixture: 134.1651987 pounds.

CAA - Clean Air Act

CAA listed substances:

tetrachloroethylene is listed in CAA Section 112(b) - HON, Section 112(b) - HAP, Section 111

1,2-epoxybutane is listed in CAA Section 112(b) - HAP.

CWA - Clean Water Act

CWA listed substances:

tetrachloroethylene is listed in CWA Section 304, Section 307, CWA Priority Pollutants.

USA - State specific regulations

California Proposition 65

Substance(s) listed under California Proposition 65:

tetrachloroethylene - Listed as carcinogen.

Massachusetts Right to know

Substance(s) listed under Massachusetts Right to know:

tetrachloroethylene

1,2-epoxybutane

nitrogen.

New Jersey Right to know

Substance(s) listed under New Jersey Right to know:

tetrachloroethylene

1,2-epoxybutane

nitrogen.

Pennsylvania Right to know

Substance(s) listed under Pennsylvania Right to know:

tetrachloroethylene

1,2-epoxybutane

nitrogen.

16. OTHER INFORMATION

Full text of phrases referred to in Section 3:

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H412 Harmful to aquatic life with long lasting effects.
H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H320 Causes eye irritation.
H280 Contains gas under pressure; may explode if heated.

Safety Data Sheet dated 2/6/2023, version 1
Disclaimer:
The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. The information relates only to the specific material and may not be valid for such material used in combination with any other material or in any process.
This Safety Data Sheet cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average