

2,2,2-Trifluoroethanol**05841-50ML**

Version 1.1

Revision Date 11/03/2021

Print Date 04/24/2023

SECTION 1. IDENTIFICATION

Product name : 2,2,2-Trifluoroethanol

Number : 000000020708

Product Use Description : Laboratory chemicals

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 : characteristic

Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 3
Acute toxicity, Category 3, Oral
Acute toxicity, Category 3, Inhalation
Serious eye damage, Category 1
Reproductive toxicity, Category 1B
Specific target organ toxicity - repeated exposure, Category 2,
Blood

2,2,2-Trifluoroethanol**05841-50ML**

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GHS Label elements, including precautionary statements

Symbol(s)

:



Signal word

: Danger

Hazard statements

: Flammable liquid and vapour.
Toxic if swallowed or if inhaled.
Causes serious eye damage.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

: **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
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.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
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.

2,2,2-Trifluoroethanol**05841-50ML**

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Revision Date 11/03/2021

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Immediately call a POISON CENTER/ doctor.
Rinse mouth.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
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 : C₂H₃F₃O

Chemical nature : Substance

Chemical name	CAS-No.	Concentration
2,2,2-Trifluoroethanol	75-89-8	100.00 %

SECTION 4. FIRST AID MEASURES

General advice : First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

Inhalation : If inhaled, remove to fresh air. Call a physician immediately.

Skin contact : After contact with skin, wash immediately with plenty of water. Call a physician if irritation develops or persists.

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Version 1.1

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

Ingestion : Rinse mouth with water. Do NOT induce vomiting. Call a physician immediately.

Notes to physician

Most important symptoms/effects, acute and delayed : No information available.

Indication of immediate medical attention and special treatment needed, if necessary : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray
Foam
Carbon dioxide (CO₂)
Dry powder

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/flashback to vapor source.
Fire may cause evolution of:
carbon oxides (CO, CO₂).
Hydrogen fluoride

Special protective equipment for firefighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

2,2,2-Trifluoroethanol**05841-50ML**

Version 1.1

Revision Date 11/03/2021

Print Date 04/24/2023

SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | | |
|---|---|---|
| Personal precautions,
protective equipment and
emergency procedures | : | Evacuate personnel to safe areas.
Ensure adequate ventilation.
Wear personal protective equipment. Unprotected persons
must be kept away.
Remove all sources of ignition.
Avoid contact with skin and eyes. |
| Environmental precautions | : | Should not be released into the environment. |
| Methods and materials for
containment and cleaning
up | : | Ventilate the area.
Do not use sparking tools.
Use explosion-proof equipment.
Contain spillage, soak up with non-combustible absorbent
material, (e.g. sand, earth, diatomaceous earth, vermiculite) and
transfer to a container for disposal according to local / national
regulations (see section 13). |

SECTION 7. HANDLING AND STORAGE**Handling**

- | | | |
|--|---|---|
| Precautions for safe
handling | : | Wear personal protective equipment.
Use only in well-ventilated areas.
Do not breathe vapours or spray mist. |
| Advice on protection against
fire and explosion | : | Keep product and empty container away from heat and sources
of ignition.
No smoking.
Take precautionary measures against static discharges.
Vapours may form explosive mixtures with air. |

Storage

- | | | |
|--|---|---|
| Conditions for safe storage,
including any
incompatibilities | : | Store in original container.
Keep containers tightly closed in a dry, cool and well-ventilated
place. |
|--|---|---|

2,2,2-Trifluoroethanol**05841-50ML**

Version 1.1

Revision Date 11/03/2021

Print Date 04/24/2023

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
Legal requirements are to be considered in regard of the selection, use and care of personal protective equipment.
Avoid exposure - obtain special instructions before use.
Do not breathe vapours or spray mist.
- Engineering measures : Use with local exhaust ventilation.
Use explosion-proof equipment.
- Eye protection : Safety goggles
- Hand protection : Impervious butyl rubber gloves
Gloves must be inspected prior to use.
Replace when worn.
- Skin and body protection : Protective suit
- Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
- Hygiene measures : Take off all contaminated clothing immediately.
Remove and wash contaminated clothing before re-use.
Wash hands before breaks and at the end of workday.
When using, do not eat, drink or smoke.

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
2,2,2-Trifluoroethanol	75-89-8	TWA : Time weighted average	(0.3 ppm)	2007	WEEL:US. OARS. WEELs Workplace Environmental Exposure Level Guide, as amended
2,2,2-Trifluoroethanol	75-89-8	TWA : Time weighted average	(0.3 ppm)	2020	WEEL:US. OARS. WEELs Workplace Environmental Exposure Level Guide, as amended

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid
Color	: colourless
Odor	: characteristic
Odor threshold	: Note: No data available
pH	: Note: No data available
Melting point/range	: ca. -44 °C
Boiling point/boiling range	: ca. 73 - 77 °C
Flash point	: 86 °F (30 °C) Method: closed cup
Evaporation rate	: Note: No data available
Flammability	: Not applicable
Lower explosion limit	: 5.5 %(V)
Upper explosion limit	: 42 %(V)
Vapor pressure	: 71 hPa at 20 °C(68 °F)
Vapor density	: Note: No data available
Density	: 1.383 g/cm ³ at 25 °C

2,2,2-Trifluoroethanol**05841-50ML**

Version 1.1

Revision Date 11/03/2021

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Water solubility	: Note: soluble
Partition coefficient: n-octanol/water	: log Pow: < 0.3
Ignition temperature	: 450 °C
Decomposition temperature	: Note: No decomposition if used as directed.
Viscosity, dynamic	: 1.722 mPa.s at 25 °C
Viscosity, kinematic	: Note: No data available
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Molecular weight	: 100.04 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not classified as a reactivity hazard.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Vapours may form explosive mixture with air. Hazardous polymerisation does not occur.
Conditions to avoid	: Keep away from heat. Keep away from sources of ignition - No smoking. Protect from moisture.
Incompatible materials	: Strong oxidizing agents Strong acids
Hazardous decomposition products	: Hydrogen fluoride Carbon oxides

2,2,2-Trifluoroethanol**05841-50ML**

Version 1.1

Revision Date 11/03/2021

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SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: LD50: 153 mg/kg Species: Rat Method: OECD Test Guideline 401
Acute inhalation toxicity	: LC50: 3.25 mg/l 784 ppm, vapour Exposure time: 4 h Species: Rat Method: OECD Test Guideline 403
Acute dermal toxicity	: LD50: > 2,000 mg/kg Species: Rat Method: OECD Test Guideline 402
Skin irritation	: Species: Rabbit Result: slight irritation Method: OECD Test Guideline 404 Note: According to the classification criteria of the European Union, the product is not considered as being a skin irritant.
Eye irritation	: Species: Rabbit Result: Risk of serious damage to eyes. Method: OECD Test Guideline 405
Sensitisation	: Mouse local lymph node assay Species: Mouse Result: non-sensitizing Method: OECD Test Guideline 429
Repeated dose toxicity	: Note: Conclusive and supporting classification (Ref: REACH Dossier - ECHA disseminated data)
Genotoxicity in vitro	: Test Method: In vitro gene mutation study in mammalian cells

2,2,2-Trifluoroethanol**05841-50ML**

Version 1.1

Revision Date 11/03/2021

Print Date 04/24/2023

Cell type: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 476

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

: Test Method: Chromosome aberration test in vitro
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 473

Carcinogenicity : Species: not specified
Note: No data available

Reproductive toxicity : Species: not specified
Note: Conclusive and supporting classification (Ref: REACH
Dossier - ECHA disseminated data)

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish : flow-through test
LC50: 119 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : Note: No data available

Toxicity to algae : Biomass
EC50: > 974 mg/l
Exposure time: 72 h
Species: Selenastrum capricornutum (green algae)

2,2,2-Trifluoroethanol**05841-50ML**

Version 1.1

Revision Date 11/03/2021

Print Date 04/24/2023

Method: OECD Test Guideline 201

: Growth rate
EC50: > 974 mg/l
Exposure time: 72 h
Species: Selenastrum capricornutum (green algae)
Method: OECD Test Guideline 201

Elimination information (persistence and degradability)

Bioaccumulation : Note: No bioaccumulation is to be expected (log Pow <= 4).

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 310

Further information on ecology**SECTION 13. DISPOSAL CONSIDERATIONS**

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

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 1986
Proper shipping name : ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.
(2,2,2-Trifluoroethanol)
Class : 3
Packing group : III
Hazard Labels : 3 (6.1)

IATA UN/ID No. : UN 1986
Description of the goods : ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.
(2,2,2-Trifluoroethanol)
Class : 3
Packaging group : III
Hazard Labels : 3 (6.1)
Packing instruction (cargo) : 366

2,2,2-Trifluoroethanol**05841-50ML**

Version 1.1

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Print Date 04/24/2023

	aircraft)	
	Packing instruction	: 355
	(passenger aircraft)	
	Packing instruction	: Y343
	(passenger aircraft)	
IMDG	UN/ID No.	: UN 1986
	Description of the goods	: ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (2,2,2-TRIFLUOROETHANOL)
	Class	: 3
	Packaging group	: III
	Hazard Labels	: 3 (6.1)
	EmS Number	: F-E, S-D
	Marine pollutant	: no

SECTION 15. REGULATORY INFORMATION**Inventories**

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemicals Act (AIC), as amended : 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. Existing Chemicals Inventory (KECI) : Not in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS) : On the inventory, or in compliance with the inventory

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

2,2,2-Trifluoroethanol**05841-50ML**

Version 1.1

Revision Date 11/03/2021

Print Date 04/24/2023

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

National regulatory information

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

SARA 313 Components : 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.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard

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.

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 2	2
Flammability	: 3	3
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.

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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.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group