

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

**Product Description:** Hydrogen chloride, 3-4 M solution in ethyl acetate  
**Cat No. :** 802532

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

### 1.3. Details of the supplier of the safety data sheet

#### Company

Thermo Fisher (Kandel) GmbH  
Erlenbachweg 2, 76870 Kandel, Germany  
Tel: +49 (0) 721 84007 280  
Fax: +49 (0) 721 84007 300

**Swiss distributor** - Fisher Scientific AG  
Neuhofstrasse 11, CH 4153 Reinach  
Tel: +41 (0) 56 618 41 11  
<https://www.fishersci.ch/ch/en/customer-help-support/forms/email-us.html>

**E-mail address** [begel.sdsdesk@thermofisher.com](mailto:begel.sdsdesk@thermofisher.com)

### 1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

customers in Switzerland:  
Tox Info Suisse Emergency Number: **145 (24hr)**  
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)  
Chemtrec (24h) Toll-Free: 0800 564 402  
Chemtrec Local: +41-43 508 20 11 (Zurich)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

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Flammable liquids

Category 2 (H225)

## Health hazards

Acute Inhalation Toxicity - Vapors  
Skin Corrosion/Irritation  
Serious Eye Damage/Eye Irritation  
Specific target organ toxicity - (single exposure)

Category 3 (H331)  
Category 1 A (H314)  
Category 1 (H318)  
Category 3 (H336)

## Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

## 2.2. Label elements



Signal Word

Danger

## Hazard Statements

H225 - Highly flammable liquid and vapor  
H331 - Toxic if inhaled  
H314 - Causes severe skin burns and eye damage  
H336 - May cause drowsiness or dizziness  
EUH066 - Repeated exposure may cause skin dryness or cracking

## Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a POISON CENTER or doctor/physician

## 2.3. Other hazards

This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Ethyl acetate	141-78-6	EEC No. 205-500-4	85-90	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319) STOT SE 3 (H336) EUH066

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Hydrochloric acid	7647-01-0	231-595-7	10-15	Acute Tox. 3 (H331) Skin Corr. 1A (H314) Press. Gas (H280)
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Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Hydrochloric acid	Eye Irrit. 2 (H319) :: 10%≤C<25% Skin Corr. 1B (H314) :: C≥25% Skin Irrit. 2 (H315) :: 10%≤C<25% STOT SE 3 (H335) :: C≥10%	-	-

Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

<b>General Advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
<b>Ingestion</b>	Do NOT induce vomiting. Call a physician or poison control center immediately.
<b>Inhalation</b>	If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate medical attention is required.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### 4.2. Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

### 4.3. Indication of any immediate medical attention and special treatment needed

<b>Notes to Physician</b>	Treat symptomatically.
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## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### Suitable Extinguishing Media

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

#### Extinguishing media which must not be used for safety reasons

No information available.

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## 5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Hydrogen chloride gas.

## 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

### 6.2. Environmental precautions

Should not be released into the environment.

### 6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

### 7.2. Conditions for safe storage, including any incompatibilities

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

**Technical Rules for Hazardous Substances (TRGS) 510**  
**Storage Class (LGK) (Germany)**

Class 3

**Switzerland - Storage of hazardous substances**

Storage class - SC 3  
<https://www.kvu.ch/de/themen/stoffe-und-produkte>  
<https://www.kvu.ch/fr/themes/substances-et-produits>  
<https://www.kvu.ch/it/temi/sostanze-e-prodotti>

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## 7.3. Specific end use(s)

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

#### Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Ethyl acetate	TWA: 734 mg/m <sup>3</sup> (8h) TWA: 200 ppm (8h) STEL: 1468 mg/m <sup>3</sup> (15min) STEL: 400 ppm (15min)	STEL: 1468 mg/m <sup>3</sup> 15 min STEL: 400 ppm 15 min TWA: 734 mg/m <sup>3</sup> 8 hr TWA: 200 ppm 8 hr	TWA / VME: 200 ppm (8 heures). TWA / VME: 734 mg/m <sup>3</sup> (8 heures). STEL / VLCT: 400 ppm. restrictive limit STEL / VLCT: 1468 mg/m <sup>3</sup> . restrictive limit	TWA: 200 ppm 8 uren TWA: 734 mg/m <sup>3</sup> 8 uren STEL: 400 ppm 15 minuten STEL: 1468 mg/m <sup>3</sup> 15 minuten	STEL / VLA-EC: 400 ppm (15 minutos). STEL / VLA-EC: 1468 mg/m <sup>3</sup> (15 minutos). TWA / VLA-ED: 200 ppm (8 horas) TWA / VLA-ED: 734 mg/m <sup>3</sup> (8 horas)
Hydrochloric acid	TWA: 5 ppm (8h) TWA: 8 mg/m <sup>3</sup> (8h) STEL: 10 ppm (15min) STEL: 15 mg/m <sup>3</sup> (15min)	STEL: 5 ppm 15 min STEL: 8 mg/m <sup>3</sup> 15 min TWA: 1 ppm 8 hr TWA: 2 mg/m <sup>3</sup> 8 hr	STEL / VLCT: 5 ppm. restrictive limit STEL / VLCT: 7.6 mg/m <sup>3</sup> . restrictive limit	TWA: 5 ppm 8 uren TWA: 8 mg/m <sup>3</sup> 8 uren STEL: 10 ppm 15 minuten STEL: 15 mg/m <sup>3</sup> 15 minuten	STEL / VLA-EC: 10 ppm (15 minutos). STEL / VLA-EC: 15 mg/m <sup>3</sup> (15 minutos). TWA / VLA-ED: 5 ppm (8 horas) TWA / VLA-ED: 7.6 mg/m <sup>3</sup> (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Ethyl acetate	TWA: 734 mg/m <sup>3</sup> 8 ore. Time Weighted Average TWA: 200 ppm 8 ore. Time Weighted Average STEL: 1468 mg/m <sup>3</sup> 15 minuti. Short-term STEL: 400 ppm 15 minuti. Short-term	TWA: 200 ppm (8 Stunden). AGW - exposure factor 2 TWA: 730 mg/m <sup>3</sup> (8 Stunden). AGW - exposure factor 2 TWA: 200 ppm (8 Stunden). MAK TWA: 750 mg/m <sup>3</sup> (8 Stunden). MAK Höhepunkt: 400 ppm Höhepunkt: 1500 mg/m <sup>3</sup>	STEL: 1468 mg/m <sup>3</sup> 15 minutos STEL: 400 ppm 15 minutos TWA: 200 ppm 8 horas TWA: 734 mg/m <sup>3</sup> 8 horas	STEL: 1468 mg/m <sup>3</sup> 15 minuten TWA: 734 mg/m <sup>3</sup> 8 uren	TWA: 200 ppm 8 tunteina TWA: 730 mg/m <sup>3</sup> 8 tunteina STEL: 400 ppm 15 minuutteina STEL: 1470 mg/m <sup>3</sup> 15 minuutteina
Hydrochloric acid	TWA: 5 ppm 8 ore. Time Weighted Average TWA: 8 mg/m <sup>3</sup> 8 ore. Time Weighted Average STEL: 10 ppm 15 minuti. Short-term STEL: 15 mg/m <sup>3</sup> 15 minuti. Short-term	TWA: 2 ppm (8 Stunden). AGW - exposure factor 2 TWA: 3 mg/m <sup>3</sup> (8 Stunden). AGW - exposure factor 2 TWA: 2 ppm (8 Stunden). MAK TWA: 3.0 mg/m <sup>3</sup> (8 Stunden). MAK Höhepunkt: 4 ppm Höhepunkt: 6 mg/m <sup>3</sup>	STEL: 10 ppm 15 minutos STEL: 15 mg/m <sup>3</sup> 15 minutos Ceiling: 2 ppm TWA: 5 ppm 8 horas TWA: 8 mg/m <sup>3</sup> 8 horas	STEL: 15 mg/m <sup>3</sup> 15 minuten TWA: 8 mg/m <sup>3</sup> 8 uren	STEL: 5 ppm 15 minuutteina STEL: 7.6 mg/m <sup>3</sup> 15 minuutteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Ethyl acetate	MAK-KZGW: 400 ppm 15 Minuten MAK-KZGW: 1468 mg/m <sup>3</sup> 15 Minuten MAK-TMW: 200 ppm 8 Stunden MAK-TMW: 734 mg/m <sup>3</sup>	TWA: 150 ppm 8 timer TWA: 540 mg/m <sup>3</sup> 8 timer STEL: 1468 mg/m <sup>3</sup> 15 minutter STEL: 400 ppm 15 minutter	STEL: 400 ppm 15 Minuten STEL: 1460 mg/m <sup>3</sup> 15 Minuten TWA: 200 ppm 8 Stunden TWA: 730 mg/m <sup>3</sup> 8	STEL: 1468 mg/m <sup>3</sup> 15 minutach TWA: 734 mg/m <sup>3</sup> 8 godzinach	TWA: 200 ppm 8 timer TWA: 734 mg/m <sup>3</sup> 8 timer STEL: 400 ppm 15 minutter. value from the regulation STEL: 1468 mg/m <sup>3</sup> 15 minutter. value from the

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	8 Stunden		Stunden		regulation
Hydrochloric acid	MAK-KZGW: 10 ppm 15 Minuten MAK-KZGW: 15 mg/m <sup>3</sup> 15 Minuten MAK-TMW: 5 ppm 8 Stunden MAK-TMW: 8 mg/m <sup>3</sup> 8 Stunden	STEL: 5 ppm 15 minuter STEL: 8 mg/m <sup>3</sup> 15 minuter	STEL: 4 ppm 15 Minuten STEL: 6 mg/m <sup>3</sup> 15 Minuten TWA: 2 ppm 8 Stunden TWA: 3 mg/m <sup>3</sup> 8 Stunden	STEL: 10 mg/m <sup>3</sup> 15 minutach TWA: 5 mg/m <sup>3</sup> 8 godzinach	Ceiling: 5 ppm Ceiling: 7 mg/m <sup>3</sup>

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Ethyl acetate	TWA: 734 mg/m <sup>3</sup> TWA: 200 ppm STEL : 1468 mg/m <sup>3</sup> STEL : 400 ppm	TWA-GVI: 200 ppm 8 satima. TWA-GVI: 734 mg/m <sup>3</sup> 8 satima. STEL-KGVI: 400 ppm 15 minutama. STEL-KGVI: 1468 mg/m <sup>3</sup> 15 minutama.	TWA: 734 mg/m <sup>3</sup> 8 hr. TWA: 200 ppm 8 hr. STEL: 1468 mg/m <sup>3</sup> 15 min STEL: 400 ppm 15 min	STEL: 1468 mg/m <sup>3</sup> STEL: 400 ppm TWA: 734 mg/m <sup>3</sup> TWA: 200 ppm	TWA: 700 mg/m <sup>3</sup> 8 hodinách. Ceiling: 900 mg/m <sup>3</sup>
Hydrochloric acid	TWA: 5 ppm TWA: 8.0 mg/m <sup>3</sup> STEL : 10 ppm STEL : 15.0 mg/m <sup>3</sup>	TWA-GVI: 5 ppm 8 satima. TWA-GVI: 8 mg/m <sup>3</sup> 8 satima. STEL-KGVI: 10 ppm 15 minutama. STEL-KGVI: 15 mg/m <sup>3</sup> 15 minutama.	TWA: 8 mg/m <sup>3</sup> 8 hr. F TWA: 5 ppm 8 hr. STEL: 10 ppm 15 min STEL: 15 mg/m <sup>3</sup> 15 min	STEL: 10 ppm STEL: 15 mg/m <sup>3</sup> TWA: 5 ppm TWA: 8 mg/m <sup>3</sup>	TWA: 8 mg/m <sup>3</sup> 8 hodinách. Ceiling: 15 mg/m <sup>3</sup>

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Ethyl acetate	TWA: 150 ppm 8 tundides. TWA: 500 mg/m <sup>3</sup> 8 tundides. STEL: 300 ppm 15 minutites. STEL: 1100 mg/m <sup>3</sup> 15 minutites.	TWA: 734 ppm 8 hr TWA: 200 mg/m <sup>3</sup> 8 hr STEL: 1468 ppm 15 min STEL: 400 mg/m <sup>3</sup> 15 min	STEL: 400 ppm STEL: 1468 mg/m <sup>3</sup> TWA: 200 ppm TWA: 734 mg/m <sup>3</sup>	STEL: 1468 mg/m <sup>3</sup> 15 percekbén. CK TWA: 734 mg/m <sup>3</sup> 8 órában. AK	TWA: 150 ppm 8 klukkustundum. TWA: 540 mg/m <sup>3</sup> 8 klukkustundum. Ceiling: 300 ppm Ceiling: 1080 mg/m <sup>3</sup>
Hydrochloric acid	TWA: 5 ppm 8 tundides. TWA: 8 mg/m <sup>3</sup> 8 tundides. STEL: 10 ppm 15 minutites. STEL: 15 mg/m <sup>3</sup> 15 minutites.	TWA: 5 ppm 8 hr TWA: 8 mg/m <sup>3</sup> 8 hr STEL: 10 ppm 15 min STEL: 15 mg/m <sup>3</sup> 15 min	STEL: 5 ppm STEL: 7 mg/m <sup>3</sup> TWA: 5 ppm TWA: 7 mg/m <sup>3</sup>	STEL: 16 mg/m <sup>3</sup> 15 percekbén. CK TWA: 8 mg/m <sup>3</sup> 8 órában. AK	STEL: 5 ppm STEL: 8 mg/m <sup>3</sup>

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Ethyl acetate	STEL: 1468 mg/m <sup>3</sup> STEL: 400 ppm TWA: 200 mg/m <sup>3</sup> TWA: 54 ppm	Ceiling: 300 ppm Ceiling: 1100 mg/m <sup>3</sup> TWA: 150 ppm IPRD TWA: 500 mg/m <sup>3</sup> IPRD	TWA: 734 mg/m <sup>3</sup> 8 Stunden TWA: 200 ppm 8 Stunden STEL: 1468 mg/m <sup>3</sup> 15 Minuten STEL: 400 ppm 15 Minuten	TWA: 200 ppm TWA: 734 mg/m <sup>3</sup> STEL: 400 ppm 15 minuti STEL: 1468 mg/m <sup>3</sup> 15 minuti	TWA: 111 ppm 8 ore TWA: 400 mg/m <sup>3</sup> 8 ore STEL: 139 ppm 15 minute STEL: 500 mg/m <sup>3</sup> 15 minute
Hydrochloric acid	STEL: 10 ppm STEL: 15 mg/m <sup>3</sup> TWA: 5 ppm TWA: 8 mg/m <sup>3</sup>	TWA: 5 ppm IPRD TWA: 8 mg/m <sup>3</sup> IPRD STEL: 10 ppm STEL: 15 mg/m <sup>3</sup>	TWA: 5 ppm 8 Stunden TWA: 8 mg/m <sup>3</sup> 8 Stunden STEL: 10 ppm 15 Minuten STEL: 15 mg/m <sup>3</sup> 15 Minuten	TWA: 5 ppm TWA: 8 mg/m <sup>3</sup> STEL: 10 ppm 15 minuti STEL: 15 mg/m <sup>3</sup> 15 minuti	TWA: 5 ppm 8 ore TWA: 8 mg/m <sup>3</sup> 8 ore STEL: 10 ppm 15 minute STEL: 15 mg/m <sup>3</sup> 15 minute

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Ethyl acetate	TWA: 50 mg/m <sup>3</sup> 2417 MAC: 200 mg/m <sup>3</sup>	Ceiling: 1100 mg/m <sup>3</sup> TWA: 200 ppm TWA: 734 mg/m <sup>3</sup>	TWA: 200 ppm 8 urah TWA: 734 mg/m <sup>3</sup> 8 urah STEL: 400 ppm 15 minutah STEL: 1468 mg/m <sup>3</sup> 15 minutah	Binding STEL: 300 ppm 15 minuter Binding STEL: 1100 mg/m <sup>3</sup> 15 minuter TLV: 150 ppm 8 timmar. NGV TLV: 550 mg/m <sup>3</sup> 8 timmar. NGV	
Hydrochloric acid	MAC: 5 mg/m <sup>3</sup>	Ceiling: 15 mg/m <sup>3</sup>	TWA: 5 ppm 8 urah	Binding STEL: 4 ppm 15	TWA: 5 ppm 8 saat

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		TWA: 5 ppm TWA: 8.0 mg/m <sup>3</sup>	anhydrous TWA: 8 mg/m <sup>3</sup> 8 urah anhydrous STEL: 10 ppm 15 minutah anhydrous STEL: 15 mg/m <sup>3</sup> 15 minutah anhydrous	minuter Binding STEL: 6 mg/m <sup>3</sup> 15 minuter TLV: 2 ppm 8 timmar. NGV TLV: 3 mg/m <sup>3</sup> 8 timmar. NGV	TWA: 8 mg/m <sup>3</sup> 8 saat STEL: 10 ppm 15 dakika STEL: 15 mg/m <sup>3</sup> 15 dakika
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## Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

## Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography

MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

## Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Ethyl acetate 141-78-6 ( 85-90 )				DNEL = 63mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Ethyl acetate 141-78-6 ( 85-90 )	DNEL = 1468 mg/m <sup>3</sup> 400 ppm	DNEL = 1468 mg/m <sup>3</sup> 400 ppm	DNEL = 734 mg/m <sup>3</sup> 200 ppm	DNEL = 734mg/m <sup>3</sup>
Hydrochloric acid 7647-01-0 ( 10-15 )	DNEL = 15mg/m <sup>3</sup>		DNEL = 8mg/m <sup>3</sup>	

## Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Ethyl acetate 141-78-6 ( 85-90 )	PNEC = 0.24mg/L	PNEC = 1.15mg/kg sediment dw	PNEC = 1.65mg/L	PNEC = 650mg/L	PNEC = 0.148mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Ethyl acetate 141-78-6 ( 85-90 )	PNEC = 0.024mg/L	PNEC = 0.115mg/kg sediment dw		PNEC = 0.2g/kg food	

## 8.2. Exposure controls

### Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to

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control hazardous materials at source

## Personal protective equipment

### Eye Protection

Goggles (European standard - EN 166)

### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Butyl rubber	recommendations			
Nitrile rubber				
Neoprene				
PVC				

### Skin and body protection

Long sleeved clothing.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.  
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

### Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced  
**Recommended Filter type:** Particulates filter conforming to EN 143 or Acid gases filter Type E Yellow conforming to EN14387

### Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.  
**Recommended half mask:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141  
When RPE is used a face piece Fit Test should be conducted

### Environmental exposure controls

No information available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance	Colorless	
Odor	No information available	
Odor Threshold	No data available	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flammability (liquid)	Highly flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Flash Point	17 °C / 62.6 °F	Method - No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
pH	Not applicable	
Viscosity	No data available	
Water Solubility	No information available	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Ethyl acetate	0.73	



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Vapor Pressure	No data available	
Density / Specific Gravity	1.05	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

## 9.2. Other information

**Explosive Properties** Vapors may form explosive mixtures with air

## SECTION 10: STABILITY AND REACTIVITY

**10.1. Reactivity** None known, based on information available

**10.2. Chemical stability** Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

**Hazardous Polymerization** No information available.  
**Hazardous Reactions** None under normal processing.

**10.4. Conditions to avoid** Keep away from open flames, hot surfaces and sources of ignition.

**10.5. Incompatible materials** Strong oxidizing agents. Strong bases.

**10.6. Hazardous decomposition products** Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen chloride gas.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Product Information

(a) acute toxicity;  
Oral Based on available data, the classification criteria are not met  
Dermal Based on available data, the classification criteria are not met  
Inhalation Category 3

#### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl acetate	10,200 mg/kg ( Rat )	> 20 mL/kg ( Rabbit ) > 18000 mg/kg ( Rabbit )	58 mg/l (rat; 8 h)
Hydrochloric acid	LD50 238 - 277 mg/kg ( Rat )	LD50 > 5010 mg/kg ( Rabbit )	LC50 = 1.68 mg/L ( Rat ) 1 h

(b) skin corrosion/irritation; Category 1 A

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

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**Respiratory**  
**Skin**

No data available  
No data available

Component	Test method	Test species	Study result
Ethyl acetate 141-78-6 ( 85-90 )	OECD Test Guideline 406	guinea pig	- non-sensitising

**(e) germ cell mutagenicity;** No data available

Component	Test method	Test species	Study result
Ethyl acetate 141-78-6 ( 85-90 )	OECD Test Guideline 471 AMES test	in vitro Bacteria	negative
	OECD Test Guideline 473 Chromosomal aberration assay	in vitro Mammalian	negative
	OECD Test Guideline 476 Gene cell mutation	in vitro Mammalian	negative
	OECD Test Guideline 474 Mouse micronucleus assay	in vivo Mammalian	negative

**(f) carcinogenicity;** No data available  
There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;** No data available

Component	Test method	Test species / Duration	Study result
Ethyl acetate 141-78-6 ( 85-90 )	OECD Test Guideline 416	Oral mouse 2 Generation	NOAEL = 26400 mg/kg bw/day
	OECD Test Guideline 414	Inhalation Rat	NOAEC = 73300 mg/m <sup>3</sup>

**(h) STOT-single exposure;** Category 3  
**Results / Target organs** Central nervous system (CNS).

**(i) STOT-repeated exposure;** No data available  
**Target Organs** No information available.

**(j) aspiration hazard;** No data available

**Symptoms / effects, both acute and delayed** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

## 11.2. Information on other hazards

**Endocrine Disrupting Properties** Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity Ecotoxicity effects

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Component	Freshwater Fish	Water Flea	Freshwater Algae
Ethyl acetate	Fathead minnow: LC50: 230 mg/l/ 96h Gold orfe: LC50: 270 mg/L/48h	EC50 = 717 mg/L/48h	EC50 = 3300 mg/L/48h

Component	Microtox	M-Factor
Ethyl acetate	EC50 = 1180 mg/L 5 min EC50 = 1500 mg/L 15 min EC50 = 5870 mg/L 15 min EC50 = 7400 mg/L 2 h	

## 12.2. Persistence and degradability

No information available

### Persistence

Persistence is unlikely.

Component	Degradability
Ethyl acetate 141-78-6 ( 85-90 )	79 % (20 d) (OECD 301 D)

## 12.3. Bioaccumulative potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Ethyl acetate	0.73	30 dimensionless

## 12.4. Mobility in soil

No information available

## 12.5. Results of PBT and vPvB assessment

No data available for assessment.

## 12.6. Endocrine disrupting properties

### Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

## 12.7. Other adverse effects

### Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance

This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

#### Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

#### Contaminated Packaging

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

#### European Waste Catalogue (EWC)

According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

#### Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

#### Switzerland - Waste Ordinance

Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600  
<https://www.fedlex.admin.ch/eli/cc/2015/891/en>

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## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

<b>14.1. UN number</b>	UN2924
<b>14.2. UN proper shipping name</b>	Flammable liquid, corrosive, n.o.s.
<b>Technical Shipping Name</b>	Ethyl acetate/Hydrogen chloride
<b>14.3. Transport hazard class(es)</b>	3
<b>Subsidiary Hazard Class</b>	8
<b>14.4. Packing group</b>	II

### ADR

<b>14.1. UN number</b>	UN2924
<b>14.2. UN proper shipping name</b>	Flammable liquid, corrosive, n.o.s.
<b>Technical Shipping Name</b>	Ethyl acetate/Hydrogen chloride
<b>14.3. Transport hazard class(es)</b>	3
<b>Subsidiary Hazard Class</b>	8
<b>14.4. Packing group</b>	II

### IATA

<b>14.1. UN number</b>	UN2924
<b>14.2. UN proper shipping name</b>	Flammable liquid, corrosive, n.o.s.
<b>Technical Shipping Name</b>	Ethyl acetate/Hydrogen chloride
<b>14.3. Transport hazard class(es)</b>	3
<b>Subsidiary Hazard Class</b>	8
<b>14.4. Packing group</b>	II

<b>14.5. Environmental hazards</b>	No hazards identified
<b>14.6. Special precautions for user</b>	No special precautions required.
<b>14.7. Maritime transport in bulk according to IMO instruments</b>	Not applicable, packaged goods

## SECTION 15: REGULATORY INFORMATION

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Ethyl acetate	141-78-6	205-500-4	-	-	X	X	KE-00047	X	X
Hydrochloric acid	7647-01-0	231-595-7	-	-	X	X	KE-20189	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Ethyl acetate	141-78-6	X	ACTIVE	X	-	X	X	X
Hydrochloric acid	7647-01-0	X	ACTIVE	X	-	X	X	X

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

### Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) -	REACH (1907/2006) -	REACH Regulation (EC
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		Annex XIV - Substances Subject to Authorization	Annex XVII - Restrictions on Certain Dangerous Substances	1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Ethyl acetate	141-78-6	-	Use restricted. See item 75. (see link for restriction details)	-
Hydrochloric acid	7647-01-0	-	Use restricted. See item 75. (see link for restriction details)	-

## REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

## Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Ethyl acetate	141-78-6	Not applicable	Not applicable
Hydrochloric acid	7647-01-0	25 tonne	250 tonne

## Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

## Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

## National Regulations

**UK** - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

## WGK Classification

Water endangering class = 1 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Ethyl acetate	WGK1	
Hydrochloric acid	WGK1	

Component	France - INRS (Tables of occupational diseases)
Ethyl acetate	Tableaux des maladies professionnelles (TMP) - RG 84

## Swiss Regulations

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Ethyl acetate 141-78-6 ( 85-90 )		Group I	
Hydrochloric acid 7647-01-0 ( 10-15 )	Prohibited and Restricted Substances		

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## 15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

## SECTION 16: OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3

H331 - Toxic if inhaled  
H314 - Causes severe skin burns and eye damage  
H318 - Causes serious eye damage  
H336 - May cause drowsiness or dizziness  
EUH066 - Repeated exposure may cause skin dryness or cracking  
H225 - Highly flammable liquid and vapor  
H319 - Causes serious eye irritation

### Legend

**CAS** - Chemical Abstracts Service

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

**IPCCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

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

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

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer  
Predicted No Effect Concentration (PNEC)

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

### Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (volatile organic compound)

### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

**Physical hazards** On basis of test data

**Health Hazards** Calculation method

**Environmental hazards** Calculation method

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

### Prepared By

Health, Safety and Environmental Department

### Revision Date

15-Feb-2024

### Revision Summary

New emergency telephone response service provider.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.  
COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No  
1907/2006 .**

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**For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).**

## **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**