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A/C No.FSU3168652001 Order No.014266 -Our Ref. 1150521851/3150759861

Dear Customer,

According to Article 31 of Regulation (EC) No 1907/2006 of the European Parliament concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), Fisher Scientific UK Limited is required to provide customers with a safety data sheet (SDS) in accordance with Annex I of Regulation (EU) No 453/2010.

In order to fulfil this requirement, the relevant safety data sheet (SDS) is sent to you on the first occasion that your organization purchases the chemical. Subsequent orders will receive a safety data sheet (SDS) if a new revision is available or 12 months has passed since you last received an SDS.

In compliance with paragraph 8, Article 31 of Regulation (EC) No 1907/2006, Fisher Scientific UK Limited is able to supply safety data sheets free of charge on paper and electronically. If you are not the appropriate person to receive this information, or if any contact details that we have are incorrect, please contact our Customer Service Department on 01509 555500 (UK) or 01 885 5854 (Ireland). We now have the ability to send safety data sheets via email, if you wish to change delivery method please contact us at the e-mail address below.

MSDS enclosed for:  
FSUT0601 Tetrachloroethylene

Yours sincerely,

Compliance Department, Fisher Scientific  
e-mail: [European.RA@thermofisher.com](mailto:European.RA@thermofisher.com)



# SAFETY DATA SHEET

Creation Date 10-Dec-2009

Revision Date 29-Jan-2013

Revision Number 11

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

Product Identifier

Product Description:

Reach Registration Number

Cat No.

Tetrachloroethylene

01-2119475329-28

T/0601/25, T/0601/PB17, T/0601/17, T/0601/21RSS, T/0601/24RSS, T/0601/25RSS, T/0601/34RSS, T/0601/27RSS

Synonyms

Perchloroethylene

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use

Laboratory chemicals

Uses advised against

No Information available

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

#### Company

Fisher Scientific UK  
Bishop Meadow Road  
Loughborough, Leicestershire,  
LE11 5RG, United Kingdom  
Tel: 01509 231166

#### E-mail address

begel.sdsdesk@thermofisher.com

#### Emergency Telephone Number

Tel: 01509 231166

Chemtrec US: (800) 424-9300

Chemtrec EU: 001 (202) 483-7616

## SECTION 2. HAZARDS IDENTIFICATION

### Classification of the substance or mixture

#### REGULATION (EC) No 1272/2008

Skin Corrosion/irritation	Category 2
Skin Sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity - (single exposure)	Category 3
Chronic aquatic toxicity	Category 2

### Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

#### Symbol(s)

Xn - Harmful

N - Dangerous for the environment

#### R-phrases

R38 - Irritating to skin

R40 - Limited evidence of a carcinogenic effect

R43 - May cause sensitization by skin contact

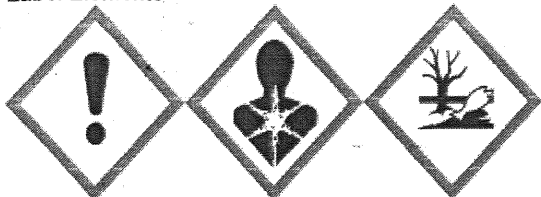
R67 - Vapors may cause drowsiness and dizziness

#### Risk Combination Phrases

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Tetrachloroethylene

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**SECTION 2. HAZARDS IDENTIFICATION**
**Label Elements**

**Signal Word**
**Warning**
**Hazard Statements**

H351 - Suspected of causing cancer  
H411 - Toxic to aquatic life with long lasting effects  
H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H336 - May cause drowsiness or dizziness

**Precautionary Statements - EU (§28, 1272/2008)**

P281 - Use personal protective equipment as required  
P273 - Avoid release to the environment  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

**Other Hazards**

No information available.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	EC-No.	Weight %	CAS-No	67/548/EEC Classification	CLP Classification - Regulation (EC) No 1272/2008	REACH No.
Tetrachloroethylene 127-18-4	EEC No. 204-825-9	>95	127-18-4	Carc.Cat.3; R40 N; R51-53 Xi;R38 R43 R67	Carc. 2 (H351) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) STOT SE 3 (H336) Aquatic Chronic 2 (H411)	01-2119475329-28

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For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

**SECTION 4. FIRST AID MEASURES****Description of first aid measures****Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

**Ingestion**

Do not induce vomiting. Obtain medical attention.

**Inhalation**

Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention.

**Notes to Physician**

Treat symptomatically

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

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..

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

No information available.

**Special hazards arising from the substance or mixture**

Thermal decomposition can lead to release of irritating gases and vapors. Containers may explode when heated.

**Advice for fire-fighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

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

Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**Environmental precautions**

Should not be released into the environment.

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**Methods and material for containment and cleaning up**

- Soak up with inert absorbent material. Keep in suitable, closed containers for disposal..

**SECTION 7. HANDLING AND STORAGE**
**Precautions for Safe Handling**

Use only under a chemical fume hood. Wear personal protective equipment. Ensure adequate ventilation. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing.

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

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from sunlight.

**Specific End Uses**
**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
**Control parameters**
**Exposure limits**
**Component**

Tetrachloroethylene

European Union	The United Kingdom	France	Belgium	Spain
	STEL: 100 ppm 15 min STEL: 689 mg/m <sup>3</sup> 15 min TWA: 50 ppm 8 hr TWA: 345 mg/m <sup>3</sup> 8 hr	VME: 50 ppm 8 heures. VME: 335 mg/m <sup>3</sup> 8 heures.	TWA: 25 ppm 8 uren TWA: 172 mg/m <sup>3</sup> 8 uren STEL: 100 ppm 15 minuten STEL: 695 mg/m <sup>3</sup> 15 minuten	VLA-EC: 100 ppm 15 minutos VLA-EC: 689 mg/m <sup>3</sup> 15 minutos VLA-ED: 25 ppm 8 horas VLA-ED: 172 mg/m <sup>3</sup> 8 horas

**Component**

Tetrachloroethylene

Italy	Germany	Portugal	The Netherlands	Finland
	Skin	STEL: 100 ppm 15 minutos TWA: 25 ppm 8 horas		TWA: 10 ppm 8 tunteina TWA: 70 mg/m <sup>3</sup> 8 tunteina

**Component**

Tetrachloroethylene

Austria	Denmark	Switzerland	Poland	Norway
Skin STEL: 200 ppm 15 Minuten STEL: 1380 mg/m <sup>3</sup> 15 Minuten TWA: 50 ppm 8 Stunden TWA: 345 mg/m <sup>3</sup> 8 Stunden	TWA: 10 ppm 8 timer TWA: 70 mg/m <sup>3</sup> 8 timer Skin	Skin STEL: 100 ppm 15 Minuten STEL: 690 mg/m <sup>3</sup> 15 Minuten MAK: 50 ppm 8 Stunden MAK: 345 mg/m <sup>3</sup> 8 Stunden	NDSch: 480 mg/m <sup>3</sup> 15 minutach TWA: 60 mg/m <sup>3</sup> 8 godzinach	TWA: 6 ppm 8 timer TWA: 40 mg/m <sup>3</sup> 8 timer STEL: 12 ppm 15 minutter. STEL: 60 mg/m <sup>3</sup> 15 minutter. Skin



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Component  
Tetrachloroethylene

Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
TWA: 120.0 mg/m <sup>3</sup>	TWA: 50 ppm 8 satima. TWA: 345 mg/m <sup>3</sup> 8 satima. STEL: 100 ppm 15 minutama. STEL: 689 mg/m <sup>3</sup> 15 minutama.	TWA: 25 ppm 8 hr. TWA: 170 mg/m <sup>3</sup> 8 hr. STEL: 150 ppm 15 min STEL: 1000 mg/m <sup>3</sup> 15 min		TWA: 250 mg/m <sup>3</sup> 8 hodinách. Potential for cutaneous absorption Ceiling: 750 mg/m <sup>3</sup>

Component  
Tetrachloroethylene

Estonia	Gibraltar	Greece	Hungary	Iceland
TWA: 10 ppm 8 tundides. TWA: 70 mg/m <sup>3</sup> 8 tundides. STEL: 25 ppm 15 minutites. STEL: 170 mg/m <sup>3</sup> 15 minutites.		STEL: 150 ppm STEL: 1000 mg/m <sup>3</sup> TWA: 50 ppm TWA: 335 mg/m <sup>3</sup>	STEL: 50 mg/m <sup>3</sup> 15 percekben. TWA: 50 mg/m <sup>3</sup> 8 órában. potential for cutaneous absorption	TWA: 10 ppm 8 klukkustundum. TWA: 70 mg/m <sup>3</sup> 8 klukkustundum. TWA: 20 ppm 8 klukkustundum. Skin notation Ceiling: 20 ppm Ceiling: 140 mg/m <sup>3</sup> Ceiling: 40 ppm

Component  
Tetrachloroethylene

Latvia	Lithuania	Luxembourg	Malta	Romania
TWA: 10 mg/m <sup>3</sup>	TWA: 10 ppm TWA: 70 mg/m <sup>3</sup> STEL: 25 ppm STEL: 170 mg/m <sup>3</sup>			TWA: 7 ppm 8 ore TWA: 50 mg/m <sup>3</sup> 8 ore STEL: 14 ppm 15 minute STEL: 100 mg/m <sup>3</sup> 15 minute

Component  
Tetrachloroethylene

Russia - TWA	Slovak Republic	Slovenia	Sweden	Turkey
TWA: 10 mg/m <sup>3</sup> STEL: 30 mg/m <sup>3</sup> vapor	Potential for cutaneous absorption	TWA: 50 ppm 8 urah TWA: 345 mg/m <sup>3</sup> 8 urah Potential for cutaneous absorption STEL: 200 ppm 15 minutah STEL: 1380 mg/m <sup>3</sup> 15 minutah	STV: 25 ppm 15 minuter STV: 170 mg/m <sup>3</sup> 15 minuter LLV: 10 ppm 8 timmar. LLV: 70 mg/m <sup>3</sup> 8 timmar.	

Biological limit values

Component  
Tetrachloroethylene

European Union	United Kingdom	France	Spain	Germany
		Perchloroethylene: 1 mg/L blood prior to shift Trichloroacetic acid: 7 mg/L urine end of workweek	Perchloroethylene: 5 ppm alveolar air start of last shift of workweek end-cut of exhaled air Perchloroethylene: 0.5 mg/L blood start of last shift of workweek Trichloroacetic acid: 3.5 mg/L urine end of workweek	Tetrachloroethene: 1 mg/L whole blood before beginning of next shift



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**Component**  
Tetrachloroethylene

Austria	Switzerland	Poland	Norway	Ireland
	Tetrachloroethene: 1 mg/L whole blood before subsequent shift Trichloroacetic acid: 7 mg/L urine end of shift, and after several shifts (for long-term exposures)			

**Component**  
Tetrachloroethylene

Bulgaria	Gibraltar	Latvia	Luxembourg	Romania
				Trichloroethanol: 300 mg/g creatinine urine end of work week

**Component**  
Tetrachloroethylene

Slovak Republic	Turkey
Tetrachloroethylene: 1 mg/L blood before the next work shift Tetrachloroethylene: 9.5 ppm air before the next work shift	

**Derived No Effect Level (DNEL)**  
**Predicted No Effect Concentration (PNEC)**

No information available.  
No information available.

**Exposure controls**

**Engineering Measures**

Use only under a chemical fume hood Ensure adequate ventilation, especially in confined areas Ensure that eyewash stations and safety showers are close to the workstation location

**Personal protective equipment**

**Eye Protection**

Safety glasses with side-shields

**Hand Protection**

Protective gloves

**Skin and body protection**

Long sleeved clothing

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice

**Environmental exposure controls**

No information available.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Physical State**

Liquid

**Appearance**

Colorless

**Odor**

sweet

**pH**

No information available.

**Vapor Pressure**

18 mbar @ 20 °C

**Viscosity**

0.89 mPa.s at 20 °C

**Boiling Point/Range**

120 - 122°C / 248 - 251.6°F @ 760 mmHg


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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Melting Point/Range	-22°C / -7.6°F
Decomposition temperature	> 150°C
Flash Point	No information available.
Autoignition Temperature	No information available.
Evaporation Rate	(Ether = 1.0)
Water Solubility	0.15 g/l (20°C)
Specific Gravity	1.625
Molecular Formula	C <sub>2</sub> Cl <sub>4</sub>
Molecular Weight	165.83

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

### Chemical Stability

Decomposes slowly on exposure to water.

### Possibility of Hazardous Reactions

Hazardous Polymerization	No information available
Hazardous Reactions	No information available.

### Conditions to Avoid

Incompatible products, Excess heat, Exposure to moist air or water.

### Incompatible Materials

Strong acids, Strong oxidizing agents, Strong bases, Metals.

### Hazardous Decomposition Products

Chlorine. Hydrogen chloride gas. Phosgene.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

### Acute Toxicity

### Component Information

#### Component

Tetrachloroethylene

LD50 Oral	LD50 Dermal	LC50 Inhalation (Dust)
2629 mg/kg (Rat)		4000 ppm (Rat) 4 h

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**Chronic Toxicity**
**Carcinogenicity**
**Component**

Tetrachloroethylene

The table below indicates whether each agency has listed any ingredient as a carcinogen

IARC	UK
Group 2A	

**Sensitization**
**Mutagenic Effects**
**Reproductive Effects**
**Developmental Effects**
**Teratogenicity**
**Target Organs**
**Other Adverse Effects**

No information available.

Mutagenic effects have occurred in humans.

Experiments have shown reproductive toxicity effects on laboratory animals

Developmental effects have occurred in experimental animals

Teratogenic effects have occurred in experimental animals.

Central nervous system (CNS) Eyes Respiratory system Skin Kidney Liver Blood

Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information

**Endocrine Disruptor Information**
**Component**

Tetrachloroethylene

EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Group II Chemical		

**SECTION 12. ECOLOGICAL INFORMATION**
**Toxicity**
**Ecotoxicity effects**

Do not empty into drains

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Tetrachloroethylene	500 mg/L EC50 > 96 h	8.6-13.5 mg/L LC50 96 h 4.73-5.27 mg/L LC50 96 h 11.0-15.0 mg/L LC50 96 h 12.4-14.4 mg/L LC50 96 h	EC50 = 100 mg/L 24 h EC50 = 112 mg/L 24 h EC50 = 120.0 mg/L 30 min	6.1 - 9.0 mg/L EC50 48 h

**Persistence and degradability**

No information available

**Bioaccumulative potential**

No information available.

Component	log Pow
Tetrachloroethylene	2.88

**Mobility in soil**


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**Results of PBT and vPvB assessment**
**Other adverse effects**

No information available

## SECTION 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**
**Waste from Residues / Unused Products**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

**Contaminated Packaging**

Empty containers should be taken to local recyclers for disposal

## SECTION 14. TRANSPORT INFORMATION

**IMDG/IMO**

UN-No	UN1897
Hazard Class	6.1
Packing Group	III
Proper Shipping Name	TETRACHLOROETHYLENE

**ADR**

UN-No	UN1897
Hazard Class	6.1
Packing Group	III
Proper Shipping Name	TETRACHLOROETHYLENE

**IATA**

UN-No	UN1897
Hazard Class	6.1
Packing Group	III
Proper Shipping Name	TETRACHLOROETHYLENE

## SECTION 15. REGULATORY INFORMATION

**Safety, health and environmental regulations/legislation specific for the substance or mixture**
**International Inventories**

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Tetrachloroethylene	204-825-9	-		X	X	-	X	X	X	X	X



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**Legend**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**CHINA** - China Inventory of Existing Chemical Substances  
**AICS** - Inventory of Chemical Substances  
**KECL** - Existing and Evaluated Chemical Substances

**Chemical Safety Assessment**

**SECTION 16. OTHER INFORMATION**

**Full text of R-phrases referred to under sections 2 and 3**

R38 - Irritating to skin  
R40 - Limited evidence of a carcinogenic effect  
R43 - May cause sensitization by skin contact  
R67 - Vapors may cause drowsiness and dizziness  
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Revision Date** 29-Jan-2013

**Revision Summary**

**Reason for revision** (M)SDS sections updated, 1, 2, 3, 16.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

**Disclaimer**

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet