

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 1 / 23

Version: 6.0

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1. Product identifier**Name of the product: **PERCHLOROETHYLENE**

Product identifier: Tetrachloroethylene.

Registration Number of the substance: 01-2119475329-28-0002

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

Identified uses: ES1: Manufacture of substance  
ES2: Use as an intermediate  
ES3: Industrial use in dry cleaning  
ES4: Professional use in dry cleaning  
ES5: Industrial use in surface cleaning  
ES6: Industrial use in heat transfer media  
ES7: Professional use in film cleaning and copying  
ES8: Distribution and (re)packing

Uses advised against: There are no uses advised against identified.

**1.3. Details of the supplier of the safety data sheet****Company/undertaking:**

Spolek pro chemickou a hutní výrobu, akciová společnost  
Revoluční 1930/86, Ústí nad Labem 400 32, Czech Republic  
Tel: +420 477 161 111 Fax.: +420 477 163 333  
Responsible person: msds@spolchemie.cz

**1.4. Emergency telephone number**

CZ: +420 477 162 094/ EN: +420 476 709 826 non-stop service  
Listing of national helpdesks at: [http://echa.europa.eu/help/nationalhelp\\_contact\\_en.asp](http://echa.europa.eu/help/nationalhelp_contact_en.asp).

**SECTION 2: HAZARDS IDENTIFICATION****2.1. Classification of the substance or mixture**

Skin Irrit.2: H315  
Skin Sens.1: H317  
Eye Irrit. 2: H319  
STOT SE 3: H336  
Carc.2: H351  
Aquatic Chronic 2: H411

**Hazards to man and the environment:** Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of causing cancer. Toxic to aquatic life with long lasting effects.

Full text of classification and text of H, EUH and P - Phrases is listed in section 16 this MSDS.

**2.2. Label elements****WARNING**

Spolek pro chemickou a hutní výrobu, akciová společnost

Revoluční 1930/86  
400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Page: 2 / 23

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Version: 6.0

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of causing cancer. Toxic to aquatic life with long lasting effects.

Do not handle until all safety precautions have been read and understood. Avoid release to the environment. Use personal protective equipment as required. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Get medical advice/attention.

CAS: 127-18-4

Index: 602-028-00-4

Contents: Tetrachloroethylene

**Obligatory phrasing:** Product density: 1,623 g/cm<sup>3</sup> (20°C); total content of the organic carbon: 14,48 % weight.; total content of the volatile organic compounds (VOC): 100,0 % weight.

### 2.3. Other hazards

PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulative non toxic (PBT).

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Identifier	CAS/ EINECS/ Registration number	Classification 1272/2008/ES	Content %	Note
Tetrachloroethylene	127-18-4/ 204-825-9/ 01-2119475329-28-0002	Skin Irrit.2: H315, Skin Sens.1: H317, Eye Irrit.2: H319, STOT SE 3: H336, Carc.2: H351, Aquat.Chronic 2: H411	99,9	OEL

Full text of classification and text of H, EUH and P - Phrases is listed in section 16 this MSDS.

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

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

In a life threatening condition soon carry out resuscitation affected and seek medical advice.

Respiratory arrest: immediately administer artificial respiration.

Cardiac arrest: immediately perform indirect heart massage.

Unconsciousness: place patient in recovery position.

**After inhalation:** Interrupt exposure source immediately and remove victim to fresh air. Remove contaminated clothing, protect the victim against cold. Depending on situation, call the rescue service and always get medical attention.

**After skin contact:** Remove contaminated clothing. Wash affected area with plenty of lukewarm water if there was no injury to the skin, it is appropriate to use and apply soap, soapy water or a shampoo, depending on the situation, call the ambulance service and always ensure medical treatment.

**After eye contact:** Immediately flush eyes with running water, open the eyelids (even violence); If a victim has contact lenses, remove them immediately, rinse for at least 10 minutes and get medical, professional treatment if possible.

**After ingestion:** DO NOT INDUCE VOMITING - i alone induced vomiting can cause complications. If possible, give activated charcoal in an amount of 5 crushed tablets, obtain medical attention.

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

Narcotic effects, harmful in contact with eyes. Damages liver, kidney, and the central nervous system. Poisoning hazard is increased by simultaneous consumption of alcohol.

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

See point 4.1

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing media

Suitable extinguishing media: Not flammable substance.

Extinguishing media to be avoided: High pressure water jet.

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

Burning can form hazardous products, which are harmful to the respiratory system.



Spolek pro chemickou a hutní výrobu, akciová společnost

Revoluční 1930/66

400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>

email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002  
Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 3 / 23  
Version: 6.0

### 5.3. Advice for firefighters

Do not enter confined fire space without adequate protective clothing and an approved positive pressure self-contained breathing apparatus.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Twilled fabric clothing (or working suit with rubber apron), rubber boots, rubber gloves, face shield or goggles. In the case of vapor or mist, use effective filter.

### 6.2. Environmental precautions

Prevent entry into sewers, follow the plan of action in case of emergency. Cover with an absorbent material (Vapex) .Used material to store in barrels and in cooperation with the department of environmental protection then defuse it.

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

Use sorbent material (Vapex, sand) to contain spilled product. Dispose of saturated sorbent material in an incineration unit for chlorinated hydrocarbons.

### 6.4. Reference to other sections

Additional advice : Refer to section 8, 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Do not eat, drink or smoke during work, observe working instructions. Wash your hands and exposed parts of body thoroughly with soap and water after work and before meal and possibly treat with suitable reparation lotion. Store in original packaging, storage tanks and containers should be placed into containment basins of corresponding content and construction.

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

Store away from sources of heat and ignition, separated from other substances, preferably in the original containers kept tightly closed. Storerooms should be provided with a first aid box and a drinking water supply station. Prevent unauthorised excess. Provide storage tanks with containment basins of standardised content.

### 7.3. Specific end use(s)

Store separately from oxidizing agents.

## SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

### 8.1. Control parameters

Tetrachloroethylene: TWA: 345 mg/m<sup>3</sup>, STEL: 689 mg/m<sup>3</sup> (EH40/2005 Workplace exposure limits).

Tetrachloroethylene:

DNEL - workers:

Long-term (systemic effects): Inhalat: 138 mg/m<sup>3</sup>

Acute (systemic effects) : inhalat: 275 mg/m<sup>3</sup>

Acute (local effects): Inhalat: 275 mg/m<sup>3</sup>

Long-term (systemic effects) : dermal: 39,4 mg/kg bw/day

DNEL - population:

Long-term (systemic effects) : Inhalat: 34,5 mg/m<sup>3</sup>

Acute (systemic effects) : lhalat: 138 mg/m<sup>3</sup>

Acute (local effects): Inhalat: 138 mg/m<sup>3</sup>

Long-term (systemic effects) : dermal: 23 mg/kg bw/day

Long-term (systemic effects) : oral: 1.3 mg/kg bw/day

Tetrachloroethylene:

PNEC:

STP: 11.2 mg/L

Freshwater: 0.051 mg/L

Freshwater sediment: 0.903 mg/kg



Spolek pro chemickou a hutní výrobu, akciová společnost

Revoluční 1930/86

400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>

email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 4 / 23

Version: 6.0

Marine water: 0.0051 mg/L

Marine water sediment: 0.0903 mg/kg

Soil: 0.01 mg/kg

## 8.2. Exposure controls

### 8.2.1 Appropriate engineering controls

Avoid carrying out activities involving exposure for more than 1 hour.

Provide extract ventilation to points where emissions occur.

Ensure material transfers are under containment or extract ventilation.

Drain down system prior to equipment break-in or maintenance.

Wear a respirator conforming to EN140 with Type A filter or better.

Wear suitable gloves tested to EN374.

### 8.2.2 Occupational exposure controls

**Respiratory protection:** Respirator conforming to EN140 with Type A filter or better.**Hand protection:** Chemically resistant glove (tested to EN374)

Preferred glove materials: Ethyl vinyl alcohol laminate ("EVAL"); Polyvinyl alcohol (PVA); Viton.

Acceptable glove materials: Butyl rubber.

Prolonged or frequently repeated contact: glove material with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374)

Brief contact: glove material with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374)

**Eye / face protection:** Safety goggles or safety shield.**Skin protection:** Twilled fabric clothing, footwear.

### 8.2.3 Environmental exposure controls

Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

Prevent discharge of undissolved substance to waste water or recover from wastewater.

Storage of finished products in closed containers (e.g., bulk tanks, drums, cans).

Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.

Vapour recovery units should be used when necessary.

Dispose of waste solvent and used containers according to local regulations.

Dispose of waste or used sacks/containers according to local regulations.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

Physical State:	Liquid.
Colour:	Colourless, clear.
Odour:	Sweetish.
pH:	Inionizable substance.
Boiling point / boiling range (°C):	121.4
Melting point / freezing point (°C):	-22
Flash point (°C):	Not flammable.
Flammability (solid, gas):	Not flammable.
Explosive properties:	Not explosive.
Oxidising properties:	No.
Vapour pressure:	2.5 kPa (20°C)
Density (g/cm <sup>3</sup> ):	1.623 (20°C)
Solubility:	
Water solubility (g/l):	0.15 (25°C)
Partition coefficient: n-octanol/water:	Log Kow (Pow): 2.53 at 20 °C.
Auto-ignition temperature (°C):	Not self-igniting.
Viscosity:	0.844 mPa.s (dynamic at 25°C)
Vapour density:	Not determined.



Spolek pro chemickou a hutní výrobu, akciová společnost

Revoluční 1930/86

400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Page: 5 / 23

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Version: 6.0

Evaporation rate: Not determined.  
Other information: Not determined.

**9.2. Other information**

Miscibility: Not determined.  
Fat solubility (oil to be specified): Unlimited.  
Conductivity: Not determined.  
Gas group: Not determined.

**SECTION 10: STABILITY AND REACTIVITY****10.1. Reactivity**

With normal use no dangerous reaction.

**10.2. Chemical stability**

Stable under recommended conditions of storage and handling of the product.

**10.3. Possibility of hazardous reactions**

No effect known.

**10.4. Conditions to avoid**

Without stabiliser this product readily decomposes (orderly in days), forming acidic substances, especially hydrogen chloride.

**10.5. Incompatible materials**

Not determined.

**10.6. Hazardous decomposition products**

Hydrogen chloride. Vapour/air mixture may form phosgene when exposed to UV-radiation.

**SECTION 11: TOXICOLOGICAL INFORMATION****11.1. Information on toxicological effects**

**Acute toxicity:** LD50(oral): 3000 mg/kg bw  
LD50(dermal): 10000 mg/kg bw

**Skin corrosion/irritation:** Irritating.

**Serious eye damage/irritation:** Causes serious eye irritation.

**Respiratory or skin sensitisation:** May cause sensitisation by skin contact.

**Mutagenicity:** Genetic toxicity: negative.

**Carcinogenicity:** Category 2 carcinogen

**Reproductive toxicity:** Fertility: NOAEC(inhal): 6900 mg/m<sup>3</sup>  
Developmental toxicity: NOAEC(inhal): 1725 mg/m<sup>3</sup>

**STOT- single exposure:** May cause drowsiness or dizziness.

**STOT- repeated exposure:** LOAEL(oral): 390 mg/kg bw/day Target organs: urogenital: kidneys.  
NOAEC(inhal): 138 mg/m<sup>3</sup> Target organs: neurologic: central nervous system.

**Aspiration hazard:** Based on available data, the classification criteria are not met.

**Other information**

Inhalation of vapour causes fatigue, lassitude, eye irritation and intoxication. Can cause damage of the liver after repeated or prolonged contact.

**SECTION 12: ECOLOGICAL INFORMATION****12.1. Toxicity**

LC 50 (96 h, fish, mg/l): 5  
EC 50 (48 h, daphnia, mg/l): 8,5  
IC 50 (72 h, algae, mg/l): 3,6

**Other hazards:** Inclusion of substance on the basis of the above test results: Dangerous for the environment chronically - Category 2.

Spolek pro chemickou a hutní výrobu, akciová společnost

VAT CZ699001352

Tel.: +420 477 161 111

Revoluční 1930/86  
400 32 Ústí nad Labem, Czech Republic

Fax: +420 477 163 333

The firm is registered in Ústí nad Labem court in section B, file 47.

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 6 / 23

Version: 6.0

immediately.

**12.2. Persistence and degradability**

The product is with difficulty biodegradable.

**12.3. Bioaccumulative potential**

Low potential for bioaccumulation (BCF &lt; 100, log Pow &lt; 3)

Log Kow (Pow): 2,53 at 20 °C

**12.4. Mobility in soil**

Mobility in soil is moderately high (Koc = 150-500)

The Henry's Law constant = 2110 Pa m<sup>3</sup>/mol at 20 °C

log Pow = 2.53

Koc = 141

**12.5. Results of PBT and vPvB assessment**

PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulative non toxic (PBT).

**12.6. Other adverse effects**

No effect known.

**SECTION 13: DISPOSAL CONSIDERATIONS****13.1. Waste treatment methods**

Waste of category N, waste code 07 01 03. Should be disposed of in a suitable incineration unit for dangerous waste, equipped with a device for the combustion of chlorinated hydrocarbons.

Properly emptied metal packagings may be used like secondary raw material, remaining packagings should be buried in a landfill or disposed of by incineration in suitable incinerator units for hazardous waste.

Handling with wastes is regulated by Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.

**SECTION 14: TRANSPORT INFORMATION****14.1. UN number:** 1897**14.2. UN proper shipping name:**

ADR/RID: TETRACHLOROETHYLENE

IMDG: TETRACHLOROETHYLENE

**14.3. Transport hazard class(es):** 6.1**14.4. Packing group:** III**14.5. Environmental hazards**

ADR/RID: Yes.

IMDG: Marine pollutant.

**14.6. Special precautions for user**

Not applicable.

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.



Spolek pro chemickou a hutní výrobu, akciová společnost

Revoluční 1930/86  
400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court at section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002  
Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 7 / 23  
Version: 6.0**Other information**Shipping Name: Tetrachloroethylene  
Classification code: T1  
Note: ENVIRONMENTALLY HAZARDOUS  
Tunnel restriction codes: (E)  
EmS: F-A/S-A**SECTION 15: REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.

Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods.

Council Directive 1999/13/EC of 11 March 1999 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations.

Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work.

**Other regulatory information:**

Not determined.

**15.2. Chemical safety assessment**

The chemical safety report has been prepared.

**SECTION 16: OTHER INFORMATION****Full wording of H, EUH, P - Phrases**

- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H336 May cause drowsiness or dizziness.
- H351 Suspected of causing cancer.
- H411 Toxic to aquatic life with long lasting effects.
- P202 Do not handle until all safety precautions have been read and understood.



Spolek pro chemickou a hutní výrobu, akciová společnost  
Revoluční 1930/86  
400 32 Ústí nad Labem, Czech Republic  
The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111  
Fax: +420 477 163 333  
<http://www.spolchemie.cz>  
email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 8 / 23

Version: 6.0

P273 Avoid release to the environment.  
P281 Use personal protective equipment as required.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P308 + P313 IF exposed or concerned: Get medical advice/attention.

**Used abbreviations**

STOT SE 3: Specific Target Organ Toxicity — Single exposure, hazard category 3  
Aquatic Chronic 2: Hazardous to the aquatic environment — Chronic hazard category 2  
Eye Irrit. 2: Eye irritation, hazard category 2  
Skin Irrit. 2: Skin irritation, hazard category 2  
Carc. 2: Carcinogenicity, hazard category 2  
Skin Sens. 1: Skin sensitization, hazard category 1  
OEL: Substance with Occupational Exposure Limits  
STEL: Short-Term Exposure Limit  
TWA: Time weighted average  
PNEC: Predicted no-effect concentration  
DNEL: Derived no-effect level  
WGK: Wassergefährdungsklasse (water hazard class)  
NOEC: No Observed Effect Concentration  
NOEL: No observed effect level  
PBT: Persistent, bioaccumulative and toxic substance  
vPvB: Very persistent and very bioaccumulative substance

bw: Body weight

VOC: Volatile Organic Compounds

**Classification methods**

Not relevant - substance.

**Sources of data**

The registration dossier.

**Additional information**

Not determined.

**Training guidelines**

Those who manipulate with the product must be demonstrably informed of its dangerous properties, principles of protecting the environment and health from its harmful effects and principles of first aid.

**Revision data**

16.11.2010 Changes made in accordance with Regulation (EC) No 1272/2008 and Regulation (EC) No 453/2010.  
28.03.2011 Change of classification according with Regulation 67/548/EHS (DSD).  
24.07.2014 Adding information in point 8.  
22.09.2015 Removed classification according to Directive 67/548 / EEC (DSD). Adding information in section 4. eSDS.  
15.10.2015 Change of classification and labelling according to Regulation (EC) No 1272/2008 (CLP).

**Spolek pro chemickou a hutní výrobu, akciová společnost**Revoluční 1930/86  
460 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)



Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 9 / 23

Version: 6.0

**1. TITLE OF THE EXPOSURE SCENARIO: ES2: Use as an intermediate**

**Sector of use:** SU3  
**Product category:** Not applicable.  
**Process category:** PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC15  
**Article category:** Not applicable.  
**Environmental release category:** ERC6a  
**Processes, task, activities covered:** Use as an intermediate, in catalyst recycling or process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

**2. OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES****2.1. Control of worker exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility

Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other OC affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented [G1];  
Assumes activities are at ambient temperature (unless stated differently) [G17].**Contributing scenario:**

ES2-W1: General exposures [CS1]; Continuous process [CS54]; (closed systems) [CS107]. PROC1

ES2-W2: General exposures [CS1]; Continuous process [CS54]; With sample collection [CS56]; (closed systems) [CS107]. PROC2

ES2-W5: Bulk transfers [CS14]; Internal [CS59]; (closed systems) [CS107]. PROC2

ES2-W11: Bulk product storage [CS85]; (closed systems) [CS107]; With sample collection [CS56]. PROC2

ES2-W12: Laboratory activities [CS36]. PROC15

**Risk management measures:**

No other specific measures identified [E120].

**Contributing scenario:**

ES2-W3: General exposures [CS1]; Use in contained batch processes [CS37]; With sample collection [CS56]. PROC3

**Risk management measures:**

Provide extract ventilation to points where emissions occur [E54].

**Contributing scenario:**

ES2-W4: Process sampling [CS2]. PROC3

**Risk management measures:**

Use a sampling system designed to control exposure [E89].

**Contributing scenario:**

ES2-W6: Bulk transfers [CS14]; Internal [CS59]. PROC8b

ES2-W7: Drum and small package filling [CS6]; Automated process with (semi) closed systems [CS93]. PROC8b

ES2-W10: Bulk transfers [CS14]; Transport [CS58]; (open systems) [CS108]. PROC8b

**Risk management measures:**

Ensure material transfers are under containment or extract ventilation [E66].

**Contributing scenario:**

ES2-W8: Equipment cleaning and maintenance [CS39]. PROC8a

**Spolek pro chemickou a hutní výrobu, akciová společnost**Revoluční 1930/86  
400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Page: 10 / 23

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Version: 6.0

**Risk management measures:**

Drain down system prior to equipment break-in or maintenance [E65].

**Contributing scenario:**

ES2-W9: Bulk transfers [CS14]; Transport [CS58]; (closed systems) [CS107], PROC8b

**Risk management measures:**

Avoid carrying out activities involving exposure for more than 1 hour [OC27].

**2.2. Control of environmental exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility

Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Release: ND

Emission days: 300days/year

Technical conditions and measures: Thermal oxidation

**Contributing scenario:**

ES2-E1: Use as an intermediate. ERC6a

**Risk management measures:**

Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

Prevent discharge of undissolved substance to waste water or recover from wastewater.

The municipal wastewater treatment plant must incorporate both primary and secondary treatments.

Do not apply sewage sludge as fertiliser to agriculture land.

Storage finished products in closed containers (e.g., bulk tanks,, drums, cans).

Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.

Vapour recovery units should be used when necessary.

**3. EXPOSURE ESTIMATION****Worker exposure:**

The worker exposure estimates for the activities associated with this use of Tetrachloroethylene have been assessed using ECETOC TRA v2. DNELs and PNECs are mentioned in point 8 of MSDS. For more information not mentioned in ES or MSDS please ask for Chemical safety report.

**Environmental exposure:****4. GUIDANCE OF COMPLIANCE CHECK WITH REQUIREMENTS OF EXPOSURE SCENARIO**

Combination of Risk management measures and Operational conditions stated in that exposure scenario guarantees Risk characterization Ratio (RCR) value < 1.

Downstream users could asses their own measures using model ECETOC TRA v2 or EUSES. They could calculate RCR as DEL/DNEL or PEC/PNEC (DNELs , PNECs in MSDS).

**Spolek pro chemickou a hutní výrobu, akciová společnost**Revoluční 1930/96  
400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002  
Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 11 / 23  
Version: 6.0**1. TITLE OF THE EXPOSURE SCENARIO: ES3: Industrial use in dry cleaning**

**Sector of use:** SU3  
**Product category:** Not applicable.  
**Process category:** PROC2, PROC4, PROC6, PROC8a, PROC8b  
**Article category:** Not applicable.  
**Environmental release category:** ERC4  
**Processes, task, activities covered:** Use of substance in industrial dry cleaning (including wool scouring, textile cleaning and heat finishing). Includes material transfers, storage and maintenance.

**2. OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES****2.1. Control of worker exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility  
Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently) [G2]  
Other OC affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented [G1];  
Assumes activities are at ambient temperature (unless stated differently) [G17].

**Contributing scenario:**

ES3-W1: General exposures [CS1]; Use in contained systems [CS38]; Continuous process [CS54]; Application of cleaning products in closed systems [CS101]. PROC2  
ES3-W2: General exposures [CS1]; Use in contained batch processes [CS37]; Application of cleaning products in closed systems [CS101]. PROC2  
ES3-W7: Material transfers [CS3]; Drum/batch transfers [CS8]; (closed systems) [CS107]. PROC2

**Risk management measures:**

No other specific measures identified [E120].

**Contributing scenario:**

ES3-W3: Material transfers [CS3]; Manual [CS34]. PROC4

**Risk management measures:**

Provide a good standard of general ventilation (not less than 3-5 air changes per hour) [E11]

**Contributing scenario:**

ES3-W4: Finishing operations [CS102]; Treatment by heating [CS129]. PROC6

**Risk management measures:**

Provide extract ventilation to points where emissions occur [E54].

**Contributing scenario:**

ES3-W5: Material transfers [CS3]; Drum/batch transfers [CS8]; With local exhaust ventilation [CS109]. PROC8b

**Risk management measures:**

Ensure material transfers are under containment or extract ventilation [E66].

**Contributing scenario:**

ES3-W6: Material transfers [CS3]; Drum/batch transfers [CS8]. PROC8b

**Risk management measures:**

Avoid carrying out activities involving exposure for more than 1 hour [OC27].

**Contributing scenario:**

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 12 / 23

Version: 6.0

ES3-W8: Equipment cleaning and maintenance [CS39]. PROC8a

**Risk management measures:**

Drain down system prior to equipment break-in or maintenance [E65].

**2.2. Control of environmental exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility

Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Release: continuous,

Emission days: 300days/year

Technical conditions and measures: Solvent evaporation system

Solvent Air Stripping Unit

Vapour Recovery Unit

Process is closed system

**Contributing scenario:**

ES3-E1: Wool scouring , textile de limpieza en seco and finishing. ERC4.

**Risk management measures:**

Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

Dispose of waste solvent and used containers according to local regulations.

Dispose of waste or used sacks/containers according to local regulations.

Storage of finished products in closed containers (e.g., bulk tanks,, drums, cans).

Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.

Vapour recovery units should be used when necessary.

**3. EXPOSURE ESTIMATION****Worker exposure:**

The worker exposure estimates for the activities associated with this use of Tetrachloroethylene have been assessed using ECETOC TRA v2. DNELs and PNECs are mentioned in point 8 of MSDS. For more information not mentioned in ES or MSDS please ask for Chemical safety report.

**Environmental exposure:****4. GUIDANCE OF COMPLIANCE CHECK WITH REQUIREMENTS OF EXPOSURE SCENARIO**

Combination of Risk management measures and Operational conditions stated in that exposure scenario guarantees Risk characterization Ratio (RCR) value < 1.

Downstream users could asses their own measures using model ECETOC TRA v2 or EUSES. They could calculate RCR as DEL/DNEL or PEC/PNEC (DNELs , PNECs in MSDS).

**Spolek pro chemickou a hutní výrobu, akciová společnost**

Revoluční 1930/06

400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 13 / 23

Version: 6.0

**1. TITLE OF THE EXPOSURE SCENARIO: ES4: Professional use in dry cleaning**

**Sector of use:** SU22  
**Product category:** Not applicable.  
**Process category:** PROC2, PROC4, PROC8a, PROC8b  
**Article category:** Not applicable.  
**Environmental release category:** ERC8a

**Processes, task, activities covered:** Use of substance in professional dry cleaning, including material transfers and maintenance.

**2. OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES****2.1. Control of worker exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility  
Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently) [G2]  
Other OC affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented [G1];  
Assumes activities are at ambient temperature (unless stated differently) [G17].

**Contributing scenario:**

ES4-W1 General exposures [CS1]; Use in contained batch processes [CS37]; Application of cleaning products in closed systems [CS101].PROC2

ES4-W5: Material transfers [CS3]. ; Drum/batch transfers [CS8]. ; (closed systems) [CS107].PROC2

**Risk management measures:**

Provide a good standard of general ventilation (not less than 3-5 air changes per hour) [E11]

**Contributing scenario:**

ES4-W2: Material transfers [CS3]; Manual [CS34]. PROC4

ES4-W4: Material transfers [CS3]; Drum/batch transfers [CS8]. PROC8b

**Risk management measures:**

Avoid carrying out activities involving exposure for more than 1 hour [OC27].

**Contributing scenario:**

ES4-W3: Material transfers [CS3]; Drum/batch transfers [CS8]; With local exhaust ventilation [CS109]. PROC8b

**Risk management measures:**

Ensure material transfers are under containment or extract ventilation [E66].

**Contributing scenario:**

ES4-W6: Equipment cleaning and maintenance [CS39]. PROC8a

**Risk management measures:**

Drain down system prior to equipment break-in or maintenance [E65]. Provide a good standard of general ventilation (not less than 3-5 air changes per hour) [E11] Wear suitable gloves tested to EN374 [PPE15].

**2.2. Control of environmental exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility  
Concentration of substance in product: Up to 100%

**Operational conditions:****Společnost pro chemickou a hutní výrobu, akciová společnost**Revoluční 1930/86  
400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

http://www.spolchemie.cz

email: info@spolchemie.cz

Internal number: 50422002

Page: 14 / 23

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Version: 6.0

Technical conditions and measures: Emission days: 365days/year  
ECSA Type 3 machine  
Activated carbon filters  
Refrigeration cooling

**Contributing scenario:**

ES4-E1: Professional dry cleaning. ERC8a.

**Risk management measures:**

Prevent leaks and the soil/water pollution caused by leaks.  
Dispose of waste solvent and used containers according to local regulations.  
Dispose of waste or used sacks/containers according to local regulations.  
Storage of finished products in closed containers (e.g., bulk tanks,, drums, cans).  
Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.

### 3. EXPOSURE ESTIMATION

**Worker exposure:**

The worker exposure estimates for the activities associated with this use of Tetrachloroethylene have been assessed using ECETOC TRA v2. DNELs and PNECs are mentioned in point 8 of MSDS. For more information not mentioned in ES or MSDS please ask for Chemical safety report.

**Environmental exposure:**

### 4. GUIDANCE OF COMPLIANCE CHECK WITH REQUIREMENTS OF EXPOSURE SCENARIO

Combination of Risk management measures and Operational conditions stated in that exposure scenario guarantees Risk characterization Ratio (RCR) value < 1.

Downstream users could asses their own measures using model ECETOC TRA v2 or EUSES. They could calculate RCR as DEL/DNEL or PEC/PNEC (DNELs , PNECs in MSDS).

**Spolek pro chemickou a hutní výrobu, akciová společnost**Revoluční 1930/86  
460 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 15 / 23

Version: 6.0

**1. TITLE OF THE EXPOSURE SCENARIO: ES5: Industrial use in surface cleaning**

Sector of use: SU3

Product category: Not applicable.

Process category: PROC2, PROC3, PROC8a, PROC8b, PROC13

Article category: Not applicable.

Environmental release category: ERC4

Processes, task, activities covered: Use in industrial surface cleaning, including material transfers, storage and maintenance

**2. OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES****2.1. Control of worker exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility

Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other OC affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented [G1];

Assumes activities are at ambient temperature (unless stated differently) [G17].

**Contributing scenario:**

ES5-W1: General exposures [CS1]; Use in contained batch processes [CS37]; Application of cleaning products in closed systems [CS101]. PROC2

ES5-W7: Material transfers [CS3]; Drum/batch transfers [CS8]; (closed systems) [CS107]. PROC2

**Risk management measures:**

No other specific measures identified [E120].

**Contributing scenario:**

ES5-W2: General exposures [CS1]; Use in contained batch processes [CS37]; Application of cleaning products in closed systems [CS101]; With local exhaust ventilation [CS109]. PROC3

**Risk management measures:**

Provide a good standard of general ventilation (not less than 3-5 air changes per hour) [E11]

**Contributing scenario:**

ES5-W3: Material transfers [CS3]; Manual [CS34]. PROC13

**Risk management measures:**

Avoid carrying out operation for more than 1 hour [OC11].

**Contributing scenario:**

ES5-W4: Material transfers [CS3]; Manual [CS34]. ; With local exhaust ventilation [CS109]. PROC13

**Risk management measures:**

Provide extract ventilation to points where emissions occur [E54].

**Contributing scenario:**

ES5-W5: Material transfers [CS3]; Drum/batch transfers [CS8]; With local exhaust ventilation [CS109]. PROC8b

**Risk management measures:**

Ensure material transfers are under containment or extract ventilation [E66].

**Contributing scenario:**

ES5-W6: Material transfers [CS3]; Drum/batch transfers [CS8]. PROC8b



Spolek pro chemickou a hutní výrobu, akciová společnost

Revoluční 1930/86

400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 16 / 23

Version: 6.0

**Risk management measures:**

Avoid carrying out activities involving exposure for more than 1 hour [OC27].

**Contributing scenario:**

ES5-W8: Equipment cleaning and maintenance [CS39]. PROC8a

**Risk management measures:**

Drain down system prior to equipment break-in or maintenance [E65].

**2.2. Control of environmental exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility

Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Release: continuous

Emission days: 300days/year

Technical conditions and measures at process level (source) to prevent release: Activated carbon filter for air treatment.

**Contributing scenario:**

ES5-E1: Metal degreasing: closed system. ERC4.

ES5-E2: Metal degreasing: semi-open systems. ERC4.

**Risk management measures:**

All waste water must be processed in an municipal wastewater treatment plant.

The wastewater treatment plant must incorporate both primary and secondary treatments.

Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

Primary and secondary treatments.

Land spreading of sludge acceptable.

Storage of finished products in closed containers (e.g., bulk tanks, drums, cans).

Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary.

**3. EXPOSURE ESTIMATION****Worker exposure:**

The worker exposure estimates for the activities associated with this use of Tetrachloroethylene have been assessed using ECETOC TRA v2. DNELs and PNECs are mentioned in point 8 of MSDS. For more information not mentioned in ES or MSDS please ask for Chemical safety report.

**Environmental exposure:****4. GUIDANCE OF COMPLIANCE CHECK WITH REQUIREMENTS OF EXPOSURE SCENARIO**

Combination of Risk management measures and Operational conditions stated in that exposure scenario guarantees Risk characterization Ratio (RCR) value < 1.

Downstream users could assess their own measures using model ECETOC TRA v2 or EUSES. They could calculate RCR as DEL/DNEL or PEC/PNEC (DNELs, PNECs in MSDS).

**Spolek pro chemickou a hutní výrobu, akciová společnost**Revoluční 1930/06  
400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)



Internal number: 50422002

Page: 17 / 23

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Version: 6.0

**1. TITLE OF THE EXPOSURE SCENARIO: ES6: Industrial use in heat transfer media**

**Sector of use:** SU3  
**Product category:** Not applicable.  
**Process category:** PROC1, PROC3, PROC8a  
**Article category:** Not applicable.  
**Environmental release category:** ERC7  
**Processes, task, activities covered:** Industrial use of substance in heat transfer media, including material transfers (no filling) and equipment cleaning and maintenance.

**2. OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES****2.1. Control of worker exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility  
Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently) [G2]  
Other OC affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented [G1];  
Assumes activities are at ambient temperature (unless stated differently) [G17].

**Contributing scenario:**

ES6-W1: General exposures (closed systems) [CS15]. PROC1  
ES6-W6: Storage [CS67]; (closed systems) [CS107]. PROC1

**Risk management measures:**

No other specific measures identified [E120].

**Contributing scenario:**

ES6-W2: Material transfers [CS3]; Use in contained batch processes [CS37]. PROC3  
ES6-W5: Equipment cleaning and maintenance [CS39]. PROC8a

**Risk management measures:**

Drain down and flush system prior to equipment break-in or maintenance [E55].

**Contributing scenario:**

ES6-W3: Cleaning [CS47]; (closed systems) [CS107]. PROC3  
ES6-W4: Material transfers [CS3]. PROC3

**Risk management measures:**

Provide a good standard of general ventilation (not less than 3-5 air changes per hour) [E11]; or; Ensure operation is undertaken outdoors [E69].

**2.2. Control of environmental exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility  
Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Release: only when emptying the system  
Emission days: 20days/year

Technical conditions and measures: Vapour Recovery Unit  
Activated carbon filter  
Process is closed system

**Spolek pro chemickou a hutní výrobu, akciová společnost**Revoluční 1930/86  
400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court at section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 18 / 23

Version: 6.0

**Contributing scenario:**

ES6-E1: Heat transfer media. ERC7

**Risk management measures:**

Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

**3. EXPOSURE ESTIMATION****Worker exposure:**

The worker exposure estimates for the activities associated with this use of Tetrachloroethylene have been assessed using ECETOC TRA v2. DNELs and PNECs are mentioned in point 8 of MSDS. For more information not mentioned in ES or MSDS please ask for Chemical safety report.

**Environmental exposure:****4. GUIDANCE OF COMPLIANCE CHECK WITH REQUIREMENTS OF EXPOSURE SCENARIO**

Combination of Risk management measures and Operational conditions stated in that exposure scenario guarantees Risk characterization Ratio (RCR) value < 1.

Downstream users could assess their own measures using model ECETOC TRA v2 or EUSES. They could calculate RCR as DEL/DNEL or PEC/PNEC (DNELs, PNECs in MSDS).

**Spolek pro chemickou a hutní výrobu, akciová společnost**Revoluční 1930/86  
460 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, 61e 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 19 / 23

Version: 6.0

**1. TITLE OF THE EXPOSURE SCENARIO: ES7: Professional use in film cleaning and copying**

**Sector of use:** SU22  
**Product category:** Not applicable.  
**Process category:** PROC2, PROC3, PROC4, PROC8a  
**Article category:** Not applicable.  
**Environmental release category:** ERC7  
**Processes, task, activities covered:** Use of substance in professional film cleaning and copying, including material transfers and maintenance.

**2. OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES****2.1. Control of worker exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility  
Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently) [G2]  
Other OC affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented [G1];  
Assumes activities are at ambient temperature (unless stated differently) [G17].

**Contributing scenario:**

ES7-W1: General exposures [CS1]; Use in contained batch processes [CS37]; With local exhaust ventilation [CS109]. PROC3  
ES7-W3: Material transfers [CS3]; Drum/batch transfers [CS8]; (closed systems) [CS107]. PROC2

**Risk management measures:**

Provide a good standard of general ventilation (not less than 3-5 air changes per hour) [E11]

**Contributing scenario:**

ES7-W2: Material transfers [CS3]; Manual [CS34]. PROC4

**Risk management measures:**

Avoid carrying out activities involving exposure for more than 1 hour [OC27].

**Contributing scenario:**

ES7-W4: Equipment cleaning and maintenance [CS39]. PROC8a

**Risk management measures:**

Wear a respirator conforming to EN140 with Type A filter or better [PPE22]

**2.2. Control of environmental exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility  
Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Release: -  
Emission days: 20days/year  
Technical conditions and measures: Vapour Recovery Unit  
Activated carbon filter  
Process is closed system

**Contributing scenario:**

ES7-E1: Film copying. ERC7



Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 20 / 23

Version: 6.0

**Risk management measures:**

Not determined.

**3. EXPOSURE ESTIMATION****Worker exposure:**

The worker exposure estimates for the activities associated with this use of Tetrachloroethylene have been assessed using ECETOC TRA v2. DNELs and PNECs are mentioned in point 8 of MSDS. For more information not mentioned in ES or MSDS please ask for Chemical safety report.

**Environmental exposure:****4. GUIDANCE OF COMPLIANCE CHECK WITH REQUIREMENTS OF EXPOSURE SCENARIO**

Combination of Risk management measures and Operational conditions stated in that exposure scenario guarantees Risk characterization Ratio (RCR) value < 1.

Downstream users could assess their own measures using model ECETOC TRA v2 or EUSES. They could calculate RCR as DEL/DNEL or PEC/PNEC (DNELs, PNECs in MSDS).

**Spolek pro chemickou a hutní výrobu, akciová společnost**

Revoluční 1930/86

400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 21 / 23

Version: 6.0

**1. TITLE OF THE EXPOSURE SCENARIO: ES8: Distribution and (re)packing**

**Sector of use:** SU3

**Product category:** Not applicable.

**Process category:** PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC15

**Article category:** Not applicable.

**Environmental release category:** ERC2  
Specific environmental release category: ESVOC 3

**Processes, task, activities covered:** Distribution and repacking the substance in batch operations, including storage, materials transfers, large and small scale packing, sampling, maintenance and associated laboratory activities.

**2. OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES****2.1. Control of worker exposure****Product characteristics:**

Physical form of product: Liquid, medium volatility

Concentration of substance in product: Up to 100%

**Operational conditions:**

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other OC affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented [G1];  
Assumes activities are at ambient temperature (unless stated differently) [G17].**Contributing scenario:**

ES8-W1: Bulk transfers [CS14]; Dedicated facility [CS81].PROC8b

ES8-W2: Drum/batch transfers [CS8]; Dedicated facility [CS81] PROC8b

**Risk management measures:**

Avoid carrying out activities involving exposure for more than 1 hour [OC27].

**Contributing scenario:**

ES8-W3: Drum and small package filling [CS6]; Dedicated facility [CS81] PROC9

**Risk management measures:**

Ensure material transfers are under containment or extract ventilation [E66].

**Contributing scenario:**

ES8-W4: Process sampling [CS2]; (closed systems) [CS107], PROC3

**Risk management measures:**

Provide a good standard of general ventilation (not less than 3-5 air changes per hour) [E11]; or; Ensure operation is undertaken outdoors [E69].

**Contributing scenario:**

ES8-W5: Equipment cleaning and maintenance [CS39], PROC8a

**Risk management measures:**

Drain down system prior to equipment break-in or maintenance [E65].

**Contributing scenario:**

ES8-W6: Bulk product storage [CS85]; (closed systems) [CS107]; With sample collection [CS56], PROC2

ES8-W7: Laboratory activities [CS36], PROC15

**Risk management measures:**

No other specific measures identified [EI20].

**2.2. Control of environmental exposure**

Spolek pro chemickou a hutní výrobu, akciová společnost

Revoluční 1930/86

400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

http://www.spolchemie.cz

email: info@spolchemie.cz

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 22 / 23

Version: 6.0

**Product characteristics:**

Physical form of product: Liquid, medium volatility

Concentration of substance in product: Up to 100%

**Operational conditions:**Frequency and duration of use: Release: -  
Emission days: 300days/year**Contributing scenario:**

ES8-E1: Distribution and (re)packing ERC2,ESVOC3

**Risk management measures:**

Not determined.

### 3. EXPOSURE ESTIMATION

**Worker exposure:**

The worker exposure estimates for the activities associated with this use of Tetrachloroethylene have been assessed using ECETOC TRA v2. DNELs and PNECs are mentioned in point 8 of MSDS. For more information not mentioned in ES or MSDS please ask for Chemical safety report.

**Environmental exposure:**

### 4. GUIDANCE OF COMPLIANCE CHECK WITH REQUIREMENTS OF EXPOSURE SCENARIO

Combination of Risk management measures and Operational conditions stated in that exposure scenario guarantees Risk characterization Ratio (RCR) value < 1.

Downstream users could assess their own measures using model ECETOC TRA v2 or EUSES. They could calculate RCR as DEL/DNEL or PEC/PNEC (DNELs, PNECs in MSDS).

**List of Abbreviations:**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites.

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

PROC1 Use in closed process, no likelihood of exposure

PROC2 Use in closed, continuous process with occasional controlled exposure

PROC3 Use in closed batch process (synthesis or formulation)

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises

PROC6 Calendaring operations

PROC8a Transfer of substance or preparation (charging/discharging) from/to ves-sels/large containers at non-dedicated facilities

PROC8b Transfer of substance or preparation (charging/discharging) from/to ves-sels/large containers at dedicated facilities

PROC9 Transfer of chemicals into small containers (dedicated filling line)

PROC13 Treatment of articles by dipping and pouring

PROC15 Use of laboratory reagents in small scale laboratories

ERC2 Formulation of preparations

ERC4 Industrial use of processing aids in processes and products, not becoming part of articles

ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

ERC7 Industrial use of substances in closed systems

ERC8a Wide dispersive indoor use of processing aids in open systems

ODKAZ other descriptors can be found at:

[http://echa.europa.eu/documents/10162/13632/information\\_requirements\\_r12\\_en.pdf](http://echa.europa.eu/documents/10162/13632/information_requirements_r12_en.pdf)

LEV Local Exhaust Ventilation

RPE Respiratory protective equipment

DNEL Derived no-effect level

PNEC Predicted no-effect concentration



Spolek pro chemickou a hutní výrobu, akciová společnost

Revoluční 1930/86

460 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemie.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)

Internal number: 50422002

Date of first issue: 1.6.2007

Date of last revision: 15.10.2015

Page: 23 / 23

Version: 6.0

RCR Risk characterisation ratio

**Spolek pro chemickou a hutní výrobu, akciová společnost**

Revoluční 1930/86

400 32 Ústí nad Labem, Czech Republic

The firm is registered in Ústí nad Labem court in section B, file 47.

VAT CZ699001352

Tel.: +420 477 161 111

Fax: +420 477 163 333

<http://www.spolchemia.cz>email: [info@spolchemie.cz](mailto:info@spolchemie.cz)