

Safety data sheet
according to 1907/2006/EC, Article 31 (REACH)

Printing date 31.07.2018

Revision: 21.07.2017

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Tetrahydrofuran, 99,8%, anhydrous (max. 0,005% H₂O), stabilized with 250 ppm of 2,6-Di-tert-butyl-4-methylphenol (BHT)
- **Article number:** TE0222
- **CAS Number:** 109-99-9
- **EC number:** 203-726-8
- **Index number:** 603-025-00-0
- **Registration number** 01-2119444314-46-XXXX
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Process category**
 - PROC5 Mixing or blending in batch processes
 - PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 - PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 - PROC15 Use as laboratory reagent
- **Application of the substance / the preparation:** Laboratory reagent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Scharlab, S.L.
C/Gato Pérez, 33. Pol.Ind. Mas d'en Cisa
08181 Sentmenat (Barcelona) SPAIN
Tel: (+34) 93 745 64 00 - FAX: (+34) 93 715 27 65
email: scharlab@scharlab.com
Internet Web Site: www.scharlab.com
- **Regional representation:**
Scharlab, S.L.
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email: scharlab@scharlab.com
Internet Web Site: www.scharlab.com
- **Further information obtainable from:** technical department
- **1.4 Emergency telephone number:**
Please contact the regional Scharlab distributor/dealer in your country
During normal opening times: Scharlab, S.L. (+34) 93 715 18 11

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.

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GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger
- **Hazard statements**
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
- **Precautionary statements**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Additional information:**
EUH019 May form explosive peroxides.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**
109-99-9 tetrahydrofuran
- **Identification number(s)**
- **EC number:** 203-726-8
- **Index number:** 603-025-00-0

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture**
No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Open and handle receptacle with care.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.

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- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
109-99-9 tetrahydrofuran
WEL Short-term value: 300 mg/m³, 100 ppm
Long-term value: 150 mg/m³, 50 ppm
Sk
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

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SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Fluid
Colour:	Colourless
Odour:	Ether-like
Odour threshold:	Not determined.
pH-value:	Not determined.

Change in condition

Melting point/freezing point:	-108.5 °C
Initial boiling point and boiling range:	65.5 °C

Flash point: -21 - ca. °C

Flammability (solid, gas): Not applicable.

Ignition temperature: 230 °C

Decomposition temperature: Not determined.

Auto-ignition temperature: Not determined.

Explosive properties: May form explosive peroxides.

Explosion limits:

Lower:	1.5 Vol %
Upper:	12 Vol %

Vapour pressure at 20 °C: 200 hPa

Density at 20 °C: 0.8892 g/cm³

Relative density: Not determined.

Vapour density: Not determined.

Evaporation rate: Not determined.

Solubility in / Miscibility with water:

Fully miscible.

Partition coefficient: n-octanol/water: Not determined.

Viscosity:

Dynamic: Not determined.

Kinematic: Not determined.

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions No dangerous reactions known.

10.4 Conditions to avoid No further relevant information available.

10.5 Incompatible materials: No further relevant information available.

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- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:**

Oral LD50 2,500 mg/kg (rat)
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity**
Suspected of causing cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
May cause respiratory irritation.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

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SECTION 14: Transport information

- **14.1 UN-Number** UN2056
- **ADR, IMDG, IATA**
- **14.2 UN proper shipping name**
- **ADR** 2056 TETRAHYDROFURAN
- **IMDG, IATA** TETRAHYDROFURAN
- **14.3 Transport hazard class(es)**
- **ADR, IMDG, IATA**



- **Class** 3 Flammable liquids.
 - **Label** 3
 - **14.4 Packing group**
 - **ADR, IMDG, IATA** II
 - **14.5 Environmental hazards:**
 - **Marine pollutant:** No
 - **14.6 Special precautions for user** Warning: Flammable liquids.
 - **Danger code (Kemler):** 33
 - **EMS Number:** 3-06
 - **Stowage Category** B
 - **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.
 - **Transport/Additional information:**
-
- **ADR**
 - **Limited quantities (LQ)** 1L
 - **Transport category** 2
 - **Tunnel restriction code** D/E
 - **UN "Model Regulation":** UN 2056 TETRAHYDROFURAN, 3, II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category** P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 40
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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Classification according to Regulation (EC) No 1272/2008

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

• **Department issuing SDS:** product safety department

• **Contact:** msds@scharlab.com

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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Annex: Exposure scenario 1

- **1 - Short title of the exposure scenario** Industrial use
- **Sector of Use**
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- **Process category**
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC15 Use as laboratory reagent
- **Environmental release category**
ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **2 - Conditions of use**
- **Duration and frequency**
8hrs (full working shift).
5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** Raw material.
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**
Assumes use at not more than 20 °C above ambient temperature, unless stated differently.
Avoid contact with eyes.
Take precautionary measures against static discharge.
Keep away from sources of ignition - No smoking.
Gloves required during a shift
- **Risk management measures**
Use in a ventilated with filtered air pressurized cabin. Effectiveness 90%
- **Worker protection**
- **Organisational protective measures**
The appropriate type of chemical protective glove has to be selected specifically, depending on the concentration and quantity of hazardous substances in the workplace.
- **Technical protective measures**
Provide explosion-proof electrical equipment.
Ensure that suitable extractors are available on processing machines
- **Personal protective measures**
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes.
Tightly sealed goggles
Wear suitable protective gloves and protective goggles /face protection during work.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Measures for consumer protection** Ensure adequate labelling.
- **Environmental protection measures**
- **Air** No special measures required.
- **Water** No special measures required.
- **Soil** No special measures required.
- **Disposal measures**
Disposal must be made according to official regulations.
Ensure that waste is collected and contained.
- **Disposal procedures**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging

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3 - Exposure estimation**Worker (dermal)**

The exposure estimation was carried out in accordance with ECETOC TRA.

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

PROC 9: 0.69 (mg/kg/d)

PROC 15: 0.03 (mg/kg/d)

Worker (inhalation)

The exposure estimation was carried out in accordance with ECETOC TRA.

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

PROC 9: 20 (mg/m³)

PROC 15: 5 (mg/m³)

Consumer Not relevant for this Exposure Scenario.**4 - Guidance for downstream users**

Whether the downstream user acts within the scope of the Exposure Scenario can be verified based on the information in sections 1 to 8.

Whether the downstream user uses the substance / the mixture within the scope of the Exposure Scenario can be determined by means of a technical assessment.

For the risk assessment, the tools recommended by ECHA can be used.

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Annex: Exposure scenario 2

- **1 - Short title of the exposure scenario** Laboratory use
- **Sector of Use**
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- **Process category**
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC15 Use as laboratory reagent
- **Environmental release category**
ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **2 - Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity**
PROC 9: 1 hour(s)
PROC 15: 8 hour(s)
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**
Assumes use at not more than 20 °C above ambient temperature, unless stated differently.
Avoid contact with eyes.
Take precautionary measures against static discharge.
Keep away from sources of ignition - No smoking.
Gloves required during a shift
- **Risk management measures**
Use in a ventilated with filtered air pressurized cabin. Effectiveness 80%
- **Worker protection**
- **Organisational protective measures**
The appropriate type of chemical protective glove has to be selected specifically, depending on the concentration and quantity of hazardous substances in the workplace.
- **Technical protective measures**
Provide explosion-proof electrical equipment.
Ensure that suitable extractors are available on processing machines
- **Personal protective measures**
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes.
Tightly sealed goggles
Wear suitable protective gloves and protective goggles /face protection during work.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Measures for consumer protection** Ensure adequate labelling.
- **Environmental protection measures**
- **Air** No special measures required.
- **Water** No special measures required.
- **Soil** No special measures required.
- **Disposal measures**
Disposal must be made according to official regulations.
Ensure that waste is collected and contained.

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• Disposal procedures

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

• Waste type Partially emptied and uncleaned packaging**• 3 - Exposure estimation****• Worker (dermal)**

The exposure estimation was carried out in accordance with ECETOC TRA.

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

PROC 9: 0.69 (mg/kg/d)

PROC 15: 0.03 (mg/kg/d)

• Worker (inhalation)

The exposure estimation was carried out in accordance with ECETOC TRA.

Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.

PROC 9: 10 (mg/m³)

PROC 15: 10 (mg/m³)

• Consumer Not relevant for this Exposure Scenario.**• 4 - Guidance for downstream users**

Whether the downstream user acts within the scope of the Exposure Scenario can be verified based on the information in sections 1 to 8.

Whether the downstream user uses the substance / the mixture within the scope of the Exposure Scenario can be determined by means of a technical assessment.

For the risk assessment, the tools recommended by ECHA can be used.