

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing 02.07.2024

version number 3

Revision: 02.07.2024

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

**\*1.1 Product identifier**

**\*Trade name:** TBN TITRATION SOLVENT : ASTM D2896  
2:1 CHLOROBENZENE & GLACIAL ACETIC ACID

**\*Article number:** TBNSOLV1W

**\*Registration number**

A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

**\*Product category** For experiments, research, or testing purposes only. Prohibited of use for other purposes.

**\*Application of the substance / the mixture** Laboratory Chemicals

**\*1.3 Details of the supplier of the safety data sheet**

**\*Manufacturer/Supplier:**

Reagecon Diagnostics Ltd.  
Shannon Free Zone,  
Shannon,  
Co. Clare,  
Ireland.  
Tel +353 61 472622  
Fax +353 61 472642

**\*Further information obtainable by contacting:** [sds@reagecon.ie](mailto:sds@reagecon.ie)

**\*1.4 Emergency telephone number:**

National Poisons Information Centre: +353 (1) 809 2166 (8.00 a.m. to 10.00 p.m. 7 days a week)  
Healthcare Professionals: +353 (1) 809 2566 (24 hour service)

For Hazardous Materials [or Dangerous Goods] Incident

Spill, Leak, Fire, Exposure, or Accident

Call CHEMTREC

For Ireland call +(353)-19014670

For Outside Ireland call +1 703-741-5970 / 1-800-424-9300 CCN849800

### SECTION 2: Hazards identification

**\*2.1 Classification of the substance or mixture**

**\*Classification according to Regulation (EC) No 1272/2008**



flame

Flam. Liq. 3      H226 Flammable liquid and vapour.



corrosion

Skin Corr. 1B      H314 Causes severe skin burns and eye damage.

Eye Dam. 1      H318 Causes serious eye damage.



environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



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Acute Tox. 4      H332 Harmful if inhaled.

**\*2.2 Label elements****\*Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

**\*Hazard pictograms**

GHS02    GHS05    GHS07    GHS09

**\*Signal word Danger****\*Hazard-determining components of labelling:**

chlorobenzene

Acetic Acid

**\*Hazard statements**

H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

H411 Toxic to aquatic life with long lasting effects.

**\*Precautionary statements**

P210      Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P240      Ground and bond container and receiving equipment.

P241      Use explosion-proof [electrical/ventilating/lighting] equipment.

P242      Use non-sparking tools.

P260      Do not breathe dusts or mists.

P280      Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310      Immediately call a POISON CENTER/doctor.

P321      Specific treatment (see on this label).

P405      Store locked up.

P501      Dispose of contents/container in accordance with local/regional/national/international regulations.

**\*2.3 Other hazards****\*Results of PBT and vPvB assessment**

**\*PBT:** Not applicable.

**\*vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

**\*3.2 Mixtures**

**\*Description:** Mixture of substances listed below with nonhazardous additions.

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**\*Dangerous components:**

CAS: 108-90-7 EINECS: 203-628-5	chlorobenzene ⚠ Flam. Liq. 3, H226; ⚠ Aquatic Chronic 2, H411; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315	50-100%
CAS: 64-19-7 EINECS: 200-580-7	Acetic Acid ⚠ Flam. Liq. 3, H226; ⚠ Skin Corr. 1A, H314 Specific concentration limits: Skin Corr. 1A; H314: $C \geq 90\%$ Skin Corr. 1B; H314: $25\% \leq C < 90\%$ Skin Irrit. 2; H315: $10\% \leq C < 25\%$ Eye Irrit. 2; H319: $10\% \leq C < 25\%$	25-50%

### SECTION 4: First aid measures

**\*4.1 Description of first aid measures****\*General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

**\*After inhalation:**

Provide fresh air, warmth and rest. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Obtain medical attention if any discomfort continues.

In case of unconsciousness place patient stably in side position for transportation.

**\*After skin contact:**

Remove contaminated clothing and rinse skin thoroughly with water. Get medical attention if any discomfort continues.

**\*After eye contact:**

Promptly wash eyes with plenty of water for up to 15 minutes. Open eyes wide apart and rinse well to remove any contact lenses. Do not remove contact lenses by hand. Get medical attention. Continue to rinse.

**\*After swallowing:**

Drink plenty of water and provide fresh air. Call for a doctor immediately.

Do not induce vomiting; call for medical help immediately. Rinse mouth thoroughly with water and give large amounts of water to drink. Never give anything by mouth to an unconscious person.

**\*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:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

**\*For safety reasons unsuitable extinguishing agents:**

Water

Water with full jet

**\*5.2 Special hazards arising from the substance or mixture** No further relevant information available.

**\*5.3 Advice for firefighters**

**\*Protective equipment:** Mount respiratory protective device.

### SECTION 6: Accidental release measures

**\*6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment as described in Section 8 below. Keep unprotected persons away.

**\*6.2 Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

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*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).*

*Use neutralising agent.*

*Dispose contaminated material as waste according to section 13.*

*Ensure adequate ventilation.*

*Do not flush with water or aqueous cleansing agents*

**\*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**

*Ensure good ventilation/exhaustion at the workplace.*

*Prevent formation of aerosols.*

**\*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:** *No special requirements.*

**\*Information about storage in one common storage facility:** *Not required.*

**\*Further information about storage conditions:** *Keep receptacle tightly sealed.*

**\*7.3 Specific end use(s)** *No further relevant information available.*

### SECTION 8: Exposure controls/personal protection

**\*8.1 Control parameters****\*Ingredients with limit values that require monitoring at the workplace:**

**CAS: 108-90-7 chlorobenzene**

WEL Short-term value: 14 mg/m<sup>3</sup>, 3 ppm

Long-term value: 4.7 mg/m<sup>3</sup>, 1 ppm

Sk

**CAS: 64-19-7 Acetic Acid**

WEL Short-term value: 50 mg/m<sup>3</sup>, 20 ppm

Long-term value: 25 mg/m<sup>3</sup>, 10 ppm

**\*Ingredients with biological limit values:**

**CAS: 108-90-7 chlorobenzene**

BMGV 5 mmol/mol creatinine

Medium: urin

Sampling time: Post shift

Parameter: 4-chlorocatechol

**\*Additional information:** *The lists valid during the making were used as basis.*

**\*8.2 Exposure controls**

**\*Appropriate engineering controls** *No further data; see section 7.*

**\*Individual protection measures, such as 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.*

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*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.*

*Where risk assessment shows air-purifying respirators are appropriate use a respirator with multi-purpose combination (US) or type ABEK (EN14387) respirator cartridges as back up to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).*

**\*Hand protection**

*Protective gloves*

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Always ensure that gloves are inspected before use.*

*Selection of protective gloves must include consideration of the penetration times along with rates of diffusion and degradation. The selected glove should comply with the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it.*

**\*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.*

*Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.*

*Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.*

**Full contact**

*Material: Nitrile rubber*

*Minimum layer thickness: 0.11 mm*

*Break through time: 480 min*

**Splash contact**

*Material: Nitrile rubber*

*Minimum layer thickness: 0.11 mm*

*Break through time: 480 min*

*If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.*

**\*Penetration time of glove material**

*In the absence of data above, the exact break through time has to be sourced from the manufacturer of the protective gloves and has to be observed.*

**\*Eye/face protection**

*Tightly sealed goggles: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)*

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### SECTION 9: Physical and chemical properties

#### \*9.1 Information on basic physical and chemical properties

##### \*General Information

*Physical state	Liquid
*Colour:	According to product specification
*Odour:	Characteristic
*Odour threshold:	Not determined.
*Melting point/freezing point:	Undetermined.
*Boiling point or initial boiling point and boiling range	118 °C
*Flammability	Flammable.
*Lower and upper explosion limit	
*Lower:	1.3 Vol %
*Upper:	17 Vol %
*Flash point:	28 °C
*Auto-ignition temperature:	485 °C
*Decomposition temperature:	Not determined.
*pH	Not determined.
*Viscosity:	
*Kinematic viscosity	Not determined.
*Dynamic:	Not determined.
*Solubility	
*water:	Not miscible or difficult to mix.
*Partition coefficient n-octanol/water (log value)	Not determined.
*Vapour pressure at 20 °C:	16 hPa
*Density and/or relative density	
*Density at 20 °C:	1.09002 g/cm <sup>3</sup>
*Relative density	Not determined.
*Vapour density	Not determined.

#### \*9.2 Other information

*Appearance:	
*Form:	Liquid
*Important information on protection of health and environment, and on safety.	
*Ignition temperature:	Product is not selfigniting.
*Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
*Solvent content:	
*Organic solvents:	33.3 %
*Change in condition	
*Evaporation rate	Not determined.

#### \*Information with regard to physical hazard classes

*Explosives	Void
*Flammable gases	Void
*Aerosols	Void
*Oxidising gases	Void
*Gases under pressure	Void
*Flammable liquids	Flammable liquid and vapour.
*Flammable solids	Void
*Self-reactive substances and mixtures	Void
*Pyrophoric liquids	Void
*Pyrophoric solids	Void
*Self-heating substances and mixtures	Void

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*Substances and mixtures, which emit flammable gases in contact with water	Void
*Oxidising liquids	Void
*Oxidising solids	Void
*Organic peroxides	Void
*Corrosive to metals	Void
*Desensitised explosives	Void

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

### SECTION 11: Toxicological information

- \*11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
- \*Acute toxicity Harmful if inhaled.

\*LD/LC50 values relevant for classification:

CAS: 108-90-7 chlorobenzene

Oral	LD50	2,910 mg/kg (rat)
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- \*Skin corrosion/irritation Causes severe skin burns and eye damage.
- \*Serious eye damage/irritation Causes serious eye damage.
- \*11.2 Information on other hazards

\*Endocrine disrupting properties

CAS: 108-90-7	chlorobenzene	List II
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### 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.
- \*12.5 Results of PBT and vPvB assessment
- \*PBT: Not applicable.
- \*vPvB: Not applicable.
- \*12.6 Endocrine disrupting properties For information on endocrine disrupting properties see section 11.
- \*12.7 Other adverse effects
- \*Remark: Toxic for fish
- \*Additional ecological information:
- \*General notes:  
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Must not reach sewage water or drainage ditch undiluted or unneutralised.  
Danger to drinking water if even small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.

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Toxic for aquatic organisms

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**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.

**SECTION 14: Transport information**

**\*14.1 UN number or ID number**

**\*ADR, IMDG, IATA**

UN2924

**\*14.2 UN proper shipping name**

**\*ADR**

2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S.  
(CHLOROBENZENE, ACETIC ACID, GLACIAL),  
ENVIRONMENTALLY HAZARDOUS

2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S.  
(CHLOROBENZENE, ACETIC ACID, GLACIAL),  
ENVIRONMENTALLY HAZARDOUS

**\*IMDG**

FLAMMABLE LIQUID, CORROSIVE, N.O.S.  
(CHLOROBENZENE, ACETIC ACID, GLACIAL),  
MARINE POLLUTANT

**\*IATA**

FLAMMABLE LIQUID, CORROSIVE, N.O.S.  
(CHLOROBENZENE, ACETIC ACID, GLACIAL)

**\*14.3 Transport hazard class(es)**

**\*ADR**



**\*Class**

3 Flammable liquids.

**\*Label**

3+8

**\*IMDG**



**\*Class**

3 Flammable liquids.

**\*Label**

3/8

**\*IATA**



**\*Class**

3 Flammable liquids.

**\*Label**

3 (8)

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*14.4 Packing group *ADR, IMDG, IATA	III
*14.5 Environmental hazards:	Product contains environmentally hazardous substances: chlorobenzene
*Marine pollutant:	Yes
*Special marking (ADR):	Symbol (fish and tree)
*14.6 Special precautions for user *Hazard identification number (Kemler code): *EMS Number: *Segregation groups	Warning: Flammable liquids. 38 F-E,S-C (SGG10) Liquid halogenated hydrocarbons, (SGG1) acids
*Stowage Category *Stowage Code	A SW2 Clear of living quarters.
*14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
*Transport/Additional information:	
*ADR *Limited quantities (LQ) *Transport category *Tunnel restriction code	5L 3 D/E
*UN "Model Regulation":	UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CHLOROBENZENE, ACETIC ACID, GLACIAL), 3 (8), III, ENVIRONMENTALLY HAZARDOUS

### SECTION 15: Regulatory information

\*15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

\*Poisons Act

\*Regulated explosives precursors

None of the ingredients is listed.

\*Regulated poisons

None of the ingredients is listed.

\*Reportable explosives precursors

None of the ingredients is listed.

\*Reportable poisons

None of the ingredients is listed.

\*Directive 2012/18/EU

\*Named dangerous substances - ANNEX I None of the ingredients is listed.

\*Seveso category

E2 Hazardous to the Aquatic Environment

P5c FLAMMABLE LIQUIDS

\*Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t

\*Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t

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\*National regulations:

\*Breakdown regulations:

Class	Share in %
II	33.3

\*Waterhazard class: Water hazard class 3 (Self-assessment): extremely hazardous for water.

\*15.2 Chemical safety assessment: A Chemical Safety Assessment has not 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.

\*Relevant Phrases:

H226 Flammable liquid and vapour.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H411 Toxic to aquatic life with long lasting effects.

\*Department issuing SDS: Health and Safety

\*Contact: sds@reagecon.ie

\*Abbreviations and acronyms:

UK REACH (Registration, Evaluation, Authorisation and restriction of Chemicals)

ADR: Accord relatif au transport international 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

ELINCS: European List of Notified 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. 3: Flammable liquids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2