



Revision date 15-Jun-2025 Version 2 Page 1/13

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name Tromethamine Injection (Hospira Inc.)

Product Code(s) PZ03044

Synonyms THAM; Tromethamine (USP); TRIS (Base); Trisamine; TRIS

Trade Name: THAM Solution Chemical Family: Not determined

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

Recommended Use Pharmaceutical product used as systemic alkalizer and fluid replenisher

1.3. Details of the supplier of the safety data sheet

Hospira, A Pfizer Company 275 North Field Drive

Lake Forest, Illinois 60045

1-800-879-3477

Pfizer Ireland Pharmaceuticals

OSG Building

Ringaskiddy, Co. Cork.

Ireland

+353 21 4378701

E-mail address pfizer-MSDS@pfizer.com

1.4. Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300 International Chemtrec (24 hours):+1-703-527-3887

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Not classified as hazardous.

OSHA Classification

Hazards not otherwise classified (HNOC)

Not applicable

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

Not applicable

2.2. Label elements

Product Name Tromethamine Injection (Hospira Inc.)

Page 2/13 Revision date 15-Jun-2025 Version 2

Signal word Not classified

Hazard statements Not classified in accordance with international standards for workplace safety.

2.3. Other hazards

Other hazards An Occupational Exposure Value has been established for one or more of the ingredients

(see Section 8).

The product does not contain any substance(s) classified as PBT or vPvB. PBT & vPvB

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

Note: This document has been prepared in accordance with standards for workplace safety, which

require the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warnings included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Hazardous

			Regulation (EC) No. 1272/2008 [CLP]	limit (SCL)		
+ ACETIC ACID (CAS #: 64-19-7)	**	200-580-7 (607-002-00-6)	\ -/	Eye Irrit. 2 :: 10%<=C<25% Skin Corr. 1A ::	No data available	No data available
NonHazardous						

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Water (CAS #: 7732-18-5)	*	-	231-791-2	Not classified	Not classified	No data available	No data available
Tromethamine (CAS #: 77-86-1)	1-5	-	201-064-4	Not classified	Not classified	No data available	No data available

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate No information available

Chemical name	Oral LD50 mg/kg	Dermal LD50	Inhalation LC50 - 4	Inhalation LC50 - 4	Inhalation LC50 - 4
		mg/kg	hour - dust/mist - mg/L	hour - vapor - mg/L	hour - gas - ppm
Water 7732-18-5	89838.9	No data available	No data available	No data available	No data available
Tromethamine 77-86-1	5900	5000	No data available	No data available	No data available
+ ACETIC ACID 64-19-7	3310	1060	11.4	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59).

Additional information

Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety. In accordance with 29 CFR 1910.1200, the exact percentage composition of this mixture has been withheld as a trade secret.

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Remove to fresh air. Seek immediate medical attention/advice.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids.

Consult a physician.

Skin contact Remove contaminated clothing. Flush area with large amounts of water. Use soap. Seek

medical attention.

Ingestion Never give anything by mouth to an unconscious person. Wash out mouth with water. Do

not induce vomiting unless directed by medical personnel. Seek medical attention

immediately.

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

Most important symptoms and effects

For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11. Taxicalogical Information

Identification and/or Section 11 - Toxicological Information.

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

Note to physicians None.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media Dry chemical, CO2, alcohol-resistant foam or water spray.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the

chemical

Fine particles (such as mists) may fuel fires/explosions.

Hazardous combustion products Formation of toxic gases is possible during heating or fire.

^{*} Proprietary

^{**} to adjust pH

Product Name Tromethamine Injection (Hospira Inc.)

Page 4/13 Revision date 15-Jun-2025 Version 2

Explosion data

Sensitivity to mechanical impact No information available. No information available. Sensitivity to static discharge

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personnel involved in clean-up should wear appropriate personal protective equipment (see **Personal precautions**

Section 8). Minimize exposure.

Use personal protection recommended in Section 8. For emergency responders

6.2. Environmental precautions

Environmental precautions Place waste in an appropriately labeled, sealed container for disposal. Care should be

taken to avoid environmental release.

6.3. Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Contain the source of the spill if it is safe to do so. Collect spilled material by a method that

controls dust generation. Avoid use of a filtered vacuum to clean spills of dry solids. Clean

contaminated surface thoroughly.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. When handling, use appropriate personal protective equipment (see Section 8). Releases to the environment should be avoided. Review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure or environmental releases. Potential points of process emissions of this material to the atmosphere should be controlled with dust collectors, HEPA filtration systems or other

equivalent controls.

Handle in accordance with good industrial hygiene and safety practice. General hygiene considerations

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Store as directed by product packaging.

7.3. Specific end use(s)

Specific use(s) Pharmaceutical product used as. systemic alkalizer and fluid replenisher.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Refer to available public information for specific member state Occupational Exposure Limits.

+ ACETIC ACID

ACGIH TLV TWA: 10 ppm STEL: 15 ppm

Austria TWA-TMW: 10 ppm; TWA-TMW: 25 mg/m³;

> STEL-KZGW: 20 ppm (8 X 5 min); STEL-KZGW: 50 mg/m³ (8 X 5 min);

Bulgaria TWA: 25 mg/m³; TWA: 10 ppm;

STEL: 50 mg/m³; STEL: 20 ppm; 25 mg/m³

Czech Republic 25 mg/m

Ceiling: 50 mg/m³
Denmark TWA: 10 ppm;

TWA: 25 mg/m³; STEL: 50 mg/m³; STEL: 20 ppm;

Estonia TWA: 10 ppm;

TWA: 25 mg/m³; STEL: 10 ppm; STEL: 25 mg/m³;

European Union TWA: 25 mg/m³;

TWA: 10 ppm; STEL: 50 mg/m³; STEL: 20 ppm; TWA: 5 ppm;

Finland TWA: 5 ppm; TWA: 13 mg/m³;

> STEL: 10 ppm; STEL: 25 mg/m³;

France 25 mg/m³

Germany DFG TWA-MAK: 10 ppm; I(2);

TWA-MAK: 25 mg/m³; I(2);

Peak: 20 ppm; Peak: 50 mg/m³;

Germany TRGS TWA-AGW; 10 ppm (exposure factor 2);

TWA-AGW; 25 mg/m³ (exposure factor 2); Hungary TWA-AK: 10 ppm;

TWA-AK: 25 mg/m³; STEL-CK: 20 ppm; STEL-CK: 50 mg/m³;

Ireland TWA: 10 ppm; TWA: 25 mg/m³;

STEL: 20 ppm; STEL: 50 mg/m³; TWA: 25 ppm;

 $\begin{tabular}{ll} Italy MDLPS & TWA: 25 ppm; \\ TWA: 10 mg/m^3; \\ \end{tabular}$

TWA: 10 mg/m³; STEL: 50 mg/m³; STEL: 20 ppm; TWA: 10 ppm;

Latvia TWA: 10 ppm; TWA: 25 mg/m³;

STEL: 50 mg/m³; STEL: 20 ppm;

Product Name Tromethamine Injection (Hospira Inc.)

Page 6/13 Revision date 15-Jun-2025 Version 2

Netherlands TWA: 10 ppm;

TWA: 25 mg/m³; STEL: 20 ppm; STEL: 50 mg/m3;

Poland TWA-NDS: 25 mg/m³; STEL-NDSCh: 50 mg/m3;

Romania TWA: 10 ppm;

TWA: 25 mg/m³; STEL: 20 ppm; STEL: 50 mg/m³;

MAC: 5 mg/m³ Russia

Skin

Slovakia TWA: 10 ppm; TWA: 25 mg/m³;

Ceiling: 50 mg/m3;

TWA-(VLA-ED): 10 ppm; Spain TWA-(VLA-ED): 25 mg/m³;

STEL (VLA-EC): 20 ppm; STEL (VLA-EC): 50 mg/m3;

Switzerland TWA-MAK: 10 ppm;

TWA-MAK: 25 mg/m³; STEL-KZGW: 20 ppm; STEL-KZGW: 50 mg/m3;

OSHA PEL TWA: 10 ppm

TWA: 25 mg/m³

(vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m³

United Kingdom TWA: 10 ppm;

TWA: 25 mg/m3; STEL: 20 ppm; STEL: 50 mg/m³;

8.2. Exposure controls

Personal protective equipment

Engineering controls Engineering controls should be used as the primary means to control exposures. General

room ventilation is adequate unless the process generates dust, mist or fumes. Keep airborne contamination levels below the exposure limits listed above in this section. Contact your safety and health professional or safety equipment supplier for assistance in selecting the correct protective clothing/equipment based on an assessment of the

workplace conditions, other chemicals used or present in the workplace and specific operational processes. Refer to applicable national standards and regulations in the

selection and use of personal protective equipment (PPE).

Wear safety glasses or goggles if eye contact is possible. (Eye protection must meet the Eye/face protection

standards in accordance with EN166, ANSI Z87.1 or international equivalent.).

Hand protection Impervious gloves (e.g. Nitrile, etc.) are recommended if skin contact with drug product is

possible and for bulk processing operations. (Protective gloves must meet the standards in

accordance with EN374, ASTM F1001 or international equivalent.).

Impervious protective clothing is recommended if skin contact with drug product is possible Skin and body protection

Product Name Tromethamine Injection (Hospira Inc.)

Page 7/13 Revision date 15-Jun-2025 Version 2

and for bulk processing operations. (Protective clothing must meet the standards in

accordance with EN13982, ANSI 103 or international equivalent.).

Under normal conditions of use, if the applicable Occupational Exposure Limit (OEL) is Respiratory protection

exceeded, wear an appropriate respirator with a protection factor sufficient to control exposures to below the OEL (e.g. particulate respirator with a half mask, P3 filter).

(Respirators must meet the standards in accordance with EN140, EN143, ASTM F2704-10

or international equivalent.).

Thermal hazards No information available.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance Solution Physical state Liquid

Color No information available No information available. Odor No information available **Odor threshold**

Property Values

No data available Melting point / freezing point Boiling point or initial boiling point and boiling range No data available Flammability (solid, gas) No data available

Lower and upper explosion limit/flammability limit

Lower explosion limit No data available Upper explosion limit No data available Flash point No data available **Autoignition temperature** No data available

Decomposition temperature

SADT (°C) No data available No data available pH (as aqueous solution) No data available No data available Kinematic viscosity

Dynamic viscosity No data available No data available Solubility No data available Vapor pressure Density and/or relative density No data available **Bulk density** No data available **Liquid Density** No data available

Vapor density No data available Particle characteristics

Particle Size No information available **Particle Size Distribution** No information available

Partition Coefficient: (Method, pH, Endpoint, Value)

Tromethamine

Predicted 7.4 Log D -4.668

9.2. Other information

Molecular formula Mixture Molecular weight Mixture

9.2.1. Information with regard to physical hazard classes

Revision date 15-Jun-2025

No information available

9.2.2. Other safety characteristics

No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact No information available. **Sensitivity to static discharge** No information available.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No information available.

10.4. Conditions to avoid

Conditions to avoid Fine particles (such as mists) may fuel fires/explosions. As a precautionary measure, keep

away from heat sources and electrostatic discharge.

10.5. Incompatible materials

Incompatible materialsAs a precautionary measure, keep away from strong oxidizers.

10.6. Hazardous decomposition products

Hazardous decomposition products No data available.

Section 11: TOXICOLOGICAL INFORMATION

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

Known Clinical Effects: Adverse effects most commonly reported in clinical use include infusion site reactions

(phlebitis), low blood sugar and respiratory depression

Acute toxicity Based on available data, the classification criteria are not met. Based on available data, the classification criteria are not met. Serious eye damage/eye irritation Skin corrosion/irritation Based on available data, the classification criteria are not met. Respiratory or skin sensitization Based on available data, the classification criteria are not met. STOT - single exposure Based on available data, the classification criteria are not met. STOT - repeated exposure Based on available data, the classification criteria are not met. Based on available data, the classification criteria are not met. Reproductive toxicity Germ cell mutagenicity Based on available data, the classification criteria are not met. Carcinogenicity Based on available data, the classification criteria are not met. **Aspiration hazard** Based on available data, the classification criteria are not met.

Acute Toxicity: (Species, Route, End Point, Dose)

Tromethamine

Rat Oral LD50 5900 mg/kg

Rat Dermal LD 50 > 5000 mg/kg

+ ACETIC ACID

Mouse Sub-tenon injection (eye) LC 50 5620 ppm/1H

Rat Oral LD 50 3310 mg/kg Rabbit Dermal LD 50 1060 uL/kg

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg (Rat)	-	-

Product Name Tromethamine Injection (Hospira Inc.)

Page 9/13 Revision date 15-Jun-2025 Version 2

Tromethamine	= 5900 mg/kg (Rat)	> 5000 mg/kg (Rat)	-
+ ACETIC ACID	= 3310 mg/kg (Rat)	= 1060 mg/kg (Rabbit)	= 11.4 mg/L (Rat) 4 h

Irritation / Sensitization: (Study Type, Species, Severity)

Tromethamine

Eye Irritation Rabbit Slight Skin Irritation Rabbit Slight

Genetic Toxicity: (Study Type, Cell Type/Organism, Result)

Tromethamine

Bacterial Mutagenicity (Ames) E. coli Negative

Carcinogenicity Not listed as a carcinogen by IARC, NTP or US OSHA.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties Based on available data, the classification criteria are not met.

11.2.2. Other information

Other adverse effects No information available.

Section 12: ECOLOGICAL INFORMATION

Environmental properties have not been thoroughly investigated. Releases to the **Environmental Overview:**

environment should be avoided.

12.1. Toxicity

Aquatic Toxicity: (Species, Method, End Point, Duration, Result)

Tromethamine

Daphnia magna (Water Flea) OECD EC50 48 hours > 980 mg/L

Pseudokirchneriella subcapitata (Green Alga) OECD EC50 48 Hours 473 mg/L

+ ACETIC ACID

Fathead Minnow NPDES LC-50 96 hours 88 mg/L Bluegill Sunfish NPDES LC-50 96 hours 75 mg/L

Goldfish NPDES LC-50 24 hours 423 mg/L

Bacterial Inhibition: (Inoculum, Method, End Point, Result)

Tromethamine

Activated sludge OECD EC50 > 1000 mg/L

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Partition Coefficient: (Method, pH, Endpoint, Value)

Product Name Tromethamine Injection (Hospira Inc.)

Page 10 / 13 Revision date 15-Jun-2025 Version 2

Tromethamine

Predicted 7.4 Log D -4.668

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment Based on available data, the classification criteria are not met.

Chemical name	PBT and vPvB assessment		
Tromethamine	Not PBT/vPvB PBT assessment does not apply		
+ ACETIC ACID	Not PBT/vPvB PBT assessment does not apply		

12.6. Endocrine disrupting properties

Based on available data, the classification criteria are not met. **Endocrine disrupting properties**

12.7. Other adverse effects

Other adverse effects No information available.

PMT or vPvM properties Based on available data, the classification criteria are not met.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products

Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural wastewater and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

Section 14: TRANSPORT INFORMATION

The following refers to all modes of transportation unless specified below.

Not regulated for transport under USDOT, EUADR, IATA, or IMDG regulations.

Not applicable **UN** number: UN proper shipping name: Not applicable Transport hazard class(es): Not applicable Packing group: Not applicable **Environmental Hazard(s):** Not applicable

Section 15: REGULATORY INFORMATION

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

Water

CERCLA/SARA Section 313 de minimus % Not Listed California Proposition 65 Not Listed TSCA Present EINECS 231-791-2 AICS Present

Tromethamine

CERCLA/SARA Section 313 de minimus % Not Listed
California Proposition 65 Not Listed
TSCA Present
EINECS 201-064-4
AICS Present
Standard for Uniform Scheduling of Medicines and Schedule 4

Poisons (SUSMP)

+ ACETIC ACID

CERCLA/SARA Section 313 de minimus % Not Listed **Hazardous Substances RQs** 5000 lb **California Proposition 65** Not Listed **TSCA** Present **EINECS** 200-580-7 **AICS** Present Schedule 5 Standard for Uniform Scheduling of Medicines and Schedule 6 Poisons (SUSMP) Schedule 2

National regulations

Germany

Chemical Prohibition Ordinance (ChemVerbotsV)

Not applicable

Chemical name	Number	Class
+ ACETIC ACID	5.2.5	Class II
64-19-7		

TRGS 905 Not applicable

<u>Switzerland</u>

Ordinance on the Incentive Tax on Volatile Organic Compounds (OVOC) SR 814.018

Not applicable Not applicable WPO (GSchV) SR 814.201; WPA (GSchG) SR 814.20

Major Accidents Ordinance SR 814.012

Not applicable Not applicable

European Union

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

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This

Product Name Tromethamine Injection (Hospira Inc.) Revision date 15-Jun-2025

Page 12 / 13 Version 2

product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
+ ACETIC ACID 64-19-7	75	-

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) Regulation (EU) 2024/590

Not applicable.

Chemical name	EU - Plant Protection Products (1107/2009/EC)	
+ ACETIC ACID	Plant protection agent	
64-19-7		

Chemical name	Biocidal Products Regulation (EU) No 528/2012 (BPR)
+ ACETIC ACID	Product-type 2: Disinfectants and algaecides not intended
64-19-7	for direct application to humans or animals Simplified
	procedure - Category 1

Explosives Precursors Marketing and Use (2019/1148)

Not applicable

Legend:

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

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

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

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing Chemicals Inventory

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances NZIOC - New Zealand Inventory of Chemicals

TCSI - Taiwan Chemical Substance Inventory

15.2. Chemical safety assessment

No information available **Chemical Safety Report**

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of any hazard and/or precautionary statements referred to under Sections 2-15

H314 - Causes severe skin burns and eye damage. H226 - Flammable liquid and vapor

Data Sources: Publicly available toxicity information. Pfizer proprietary drug development information.

Product Name Tromethamine Injection (Hospira Inc.) Revision date 15-Jun-2025

Page 13 / 13 Version 2

15-Jun-2025 **Revision date**

Prepared By Pfizer Global Environment, Health, and Safety

Pfizer Inc believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time.