TRIS-BUFFER, 99.9%+ PURITY, AR GRADE

SECTION 1: PRODUCT IDENTIFICATION

Product Name: TRIS-BUFFER, 99.9%+ PURITY, AR GRADE
Product Code: CM 23360
CAS#: 77-86-1
Synonym: Not available
Molecular weight: 121.14
Chemical Formula: $C_4H_{11}NO_3$

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:
Name: TRIS BUFFER
CAS#: 77-86-1
Molecular weight: 121.14
Chemical Formula: $C_4H_{11}NO_3$
Toxicological Data on Ingredients: Not Available

SECTION 3: HAZARDS IDENTIFICATION

Classification of the substance or mixture: Not a hazardoussubstance or mixture according to Regulation (EC) No 1272/2008
Other hazards: This substance is not considered to be persistent, bio accumulating and toxic (PBT). This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher.

SECTION 4: FIRST AID MEASURES

Ifinhaled If breathed in: Move person into fresh air. If not breathing, give artificial respiration. Consult a physician
Incase of skin contact: Wash off with soap and plenty of water. Consult a physician.
Incase of eye contact: Flush eyes with water as a precaution.
Ifswallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Most important symptoms and effects, both acute and delay: Not Available

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing media:
Suitable extinguishing media: Water Foam Carbon dioxide(CO2) Dry powder
Unsuitable extinguishing media: For this substance/mixtureno limitations of extinguishing agents are given
Special hazards: Arising from the substance or mixture Carbon oxides Nitrogen oxides (NOx) Combustible.
Development of hazardous combustion gases or vapors possible in the event of fire
Advice for firefighters: In the event of fire, wear self-contained breathing apparatus
Further information: Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire-extinguishing water from contaminating surface water or the ground water system

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergencyprocedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensureadequate ventilation. Avoid breathing dust

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers.

SECTION 7: HANDLING AND STORAGE

Precautions: Keep away from heat. Keep away from sourcesof ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents.
Storage: Store in tightly closed container in a cool, & dry place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment:
Eye/face protection: Safety glasses with side-shields conforming to Use equipment for eye protection tested and approved under appropriate government standards
Skin protection: Handle with gloves. 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.
Body Protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection: Use respirators and components tested and approved under appropriate government standards.
Control of environmental exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physicalstate and appearance Form	:White crystalline powder
Odour	:Not available
Taste	:Not available
Molecular Weight	:Not available
Colour	:Not available
pH	:10.5 - 11.5
Boiling Point	:Not available
Melting Point	:Not available
CriticalTemperature	:Not available
Specific Density	:Not Available
Vapor Pressure	:Not Available
Volatility	:Not Available
Odor Threshold	:Not Available
Water/Oil Dist. Coeff.	:Not Available
Ionicity (in Water)	:Not Available
Dispersion Properties	:Not Available
Solubility	:Freely Soluble In Water

SECTION 10: STABILITYAND REACTIVITY DATA

Reactivity: The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential maygenerally be assumed

Chemical stability: The product is chemically stable under standard ambient conditions (room temperature)
Possibility of hazardous reactions: Violent reactions possible with: Oxidizing agents Bases Caution In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines
Conditions to avoid: Not Available
Incompatible materials: Not Available

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity:
LD50 Oral - Rat - female - > 5.000 mg/kg
Inhalation: Not Available LD50
Dermal - Rat - male and female - > 5.000 mg/kg
Skin corrosion/irritation: Skin - Rabbit Result: No skin irritation - 4 h
Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation
Special Remarks on Chronic Effects on Humans: Not available
Special Remarks on other Toxic Effects on Humans: Not Available

SECTION 12: ECOLOGICAL INFORMATION

Toxicity: Toxicity to daphnia and other aquatic invertebrate'sstatic test EC50 - Daphnia magna (Water flea) - > 980 mg/l - 48 h
Toxicity to bacteria static test EC50 - activated sludge - > 1.000mg/l - 3 h
Persistence and degradability: Biodegradability aerobic - Exposure time 28 d Result: 97,1 % - Readily biodegradable.
Results of PBT and vPvB assessment: This substance is not considered to be persistent, bio accumulating and toxic (PBT). This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

SECTION 14: TRANSPORT INFORMATION

UN number:
ADR/RID: IMDG: IATA:
UN proper shipping name
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods
Transport hazard class (es):
ADR/RID: IMDG: IATA:
Packaging group:
ADR/RID: IMDG: IATA:
Environmental hazards:
ADR/RID: No IMDG Marine pollutant:No IATA: No

SECTION 15: OTHER REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture: This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
Chemical Safety Assessment: A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION

References: Full Text of H & R Statements: Not available
Other Special Considerations: Not available.

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