

**Inner buffer HM TK blue**

Material number 238555/238039

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**1. Product and company identification****Product identifier**

Trade name: Inner buffer HM TK blue

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

General use: Buffer solution, calibration solution

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

Company name: Hamilton Bonaduz AG

Street/POB-No.: Via Crusch 8

Postal Code, city: 7402 Bonaduz

Switzerland

WWW: [www.hamiltoncompany.com](http://www.hamiltoncompany.com)

Telephone: +41 58 610 10 10

Department responsible for information:

After-sales service

E-mail: [techsupport.pa.ch@hamilton.ch](mailto:techsupport.pa.ch@hamilton.ch)**Emergency phone number**

GIZ-Nord, Göttingen, Germany,

Telephone: +49 551-19240

**2. Hazards identification****Emergency overview**

Appearance: Physical state at 68 °F and 101.3 kPa: liquid

Color: blue

Odor: No data available

Classification: Acute Toxicity - oral - Category 4; Reproductive toxicant - Category 1B;

Hazard symbols:

Signal word: **Danger**

Hazard statements: Harmful if swallowed.

May damage fertility. May damage the unborn child.

Precautionary statements:

Obtain special instructions before use.

Wash hands and face thoroughly after handling.

Do not eat, drink or smoke when using this product.

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

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

IF exposed or concerned: Get medical advice/attention.

Rinse mouth.

Store locked up.

Dispose of contents/container to hazardous or special waste collection point.

**Regulatory status**

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Hazards not otherwise classified**

see section 11: Toxicological information

**3. Composition / Information on ingredients**

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 107-21-1	Ethylene glycol	50 - 80 %	Acute Toxicity - oral - Category 4.
CAS 1303-96-4	Disodium tetraborate x 10 H <sub>2</sub> O	3 - 8 %	Reproductive toxicant - Category 1B.

**4. First aid measures**

In case of inhalation:	Move victim to fresh air, put at rest and loosen restrictive clothing. If breathing becomes irregular or ceases, apply rescue breathing or artificial respiration immediately, where required supply oxygen. Seek medical attention.
Following skin contact:	Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.
After swallowing:	Immediately get medical attention. Drink large quantities of water. Induce vomiting. Keep airway open. In case of vomiting, lay at least head on side. If victim is at risk of losing consciousness, position and transport on their side. Give activated carbon (20-40 g in a suspension of 10%). As a laxative, affected person should drink sodium sulfate (1 tablespoon in 1/4 L water).

**Most important symptoms/effects, acute and delayed**

Harmful if swallowed.

**Information to physician**

Information about ethylene glycol:  
Gastric lavage. Maintain good diuresis.  
Monitoring of electrolytes and renal function.  
On irritation of the respiratory system use an aerosol dispenser and treat with 5 doses of dexamethasone aerosol (e.g. Auxiloson, Thomae) every 10 minutes until symptoms cease.

**5. Fire fighting measures**

Flash point/flash point range:

> 231.8 °F

Auto-ignition temperature: No data available

Suitable extinguishing media:

Water spray jet, alcohol resistant foam, dry chemical powder, carbon dioxide.

Extinguishing media which must not be used for safety reasons:

strong water jet

### Specific hazards arising from the chemical

Combustible.

In case of fire may be liberated: Carbon monoxide and carbon dioxide, boron compounds.

Protective equipment and precautions for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information:

Do not allow water used to extinguish fire to enter drains, ground or waterways.

## 6. Accidental release measures

Personal precautions:

Avoid contact with the substance. Do not breathe vapors.

In enclosed areas: Provide fresh air.

Wear appropriate protective equipment. Keep unprotected people away.

Environmental precautions:

Do not empty into drains.

Methods for clean-up:

Soak up with absorbent materials such as sand, siliceous earth, acid- or universal binder.

Store in special closed containers and dispose of according to ordinance. Final cleaning.

Additional information:

Remove all sources of ignition.

## 7. Handling and storage

### Handling

Advices on safe handling:

Provide adequate ventilation, and local exhaust as needed. Obtain special instructions before use. Avoid contact with the substance. Wear appropriate protective equipment.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.

### Storage

Requirements for storerooms and containers:

Keep container tightly closed and dry.

## 8. Exposure controls / personal protection

### Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
107-21-1	Ethylene glycol	USA: ACGIH: STEL	10 mg/m <sup>3</sup>
			(inhalable fraction Aerosol)
		USA: ACGIH: STEL	50 ppm (vapor)
1303-96-4	Disodium tetraborate x 10 H <sub>2</sub> O	USA: ACGIH: TWA	25 ppm (vapor)
		USA: ACGIH: STEL	6 mg/m <sup>3</sup> (inhalable fraction)
		USA: ACGIH: TWA	2 mg/m <sup>3</sup> (inhalable fraction)
		USA: NIOSH: TWA	5 mg/m <sup>3</sup>

## Engineering controls

When aerosols or vapors form: Withdraw by suction.

See also information in chapter 7, section storage.

## Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: Wear suitable protective clothing.

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.

Gloves with following specifications are qualified:

Nitrile rubber-Layer thickness: 0,11 mm - Breakthrough time: > 480 min.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

General hygiene considerations:

Obtain special instructions before use.

Take off immediately all contaminated clothing.

Avoid contact with skin and eyes.

After work, wash hands and face.

When using do not eat, drink or smoke.

## Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

# 9. Physical and chemical properties

## Information on basic physical and chemical properties

Appearance: Physical state at 68 °F and 101.3 kPa: liquid  
Color: blue

Odor: No data available

Odor threshold: No data available

pH: No data available

Melting point/freezing point: No data available

Initial boiling point and boiling range: > 212 °F

Flash point/flash point range: > 231.8 °F

Evaporation rate: No data available

Flammability: No data available

Explosion limits: No data available

Vapor pressure: No data available

Vapor density: No data available

Density: 1.1 - 1.2 g/mL

Water solubility: soluble

Partition coefficient: n-octanol/water: No data available

Auto-ignition temperature: No data available

Thermal decomposition: No data available

Additional information: No data available

## 10. Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Violent reaction with strong alkalis, oxidizing materials and amines. May attack plastics.
Conditions to avoid:	In case of strong heating: On contact with air, potentially explosive mixtures may develop.
Incompatible materials:	Strong alkalis, Oxidizing agent, amines
Thermal decomposition:	No data available

## 11. Toxicological information

### Toxicological tests

Acute toxicity:	LD50 Rat, oral (ethylene glycol): 4700 mg/kg LDLo human, oral (ethylene glycol): 786 mg/kg
Toxicological effects:	The statements are derived from the properties of the single components. No toxicological data is available for the product as such. Acute toxicity (oral): Acute Toxicity - oral - Category 4 = Harmful if swallowed. Acute toxicity (dermal): Inconclusive data. mild irritant (Rabbit) Danger of cutaneous absorption. Acute toxicity (inhalative): Inconclusive data. Vapors: strongly irritant Skin corrosion/irritation: Lack of data. Serious eye damage/irritation: Inconclusive data. mild irritant (Rabbit) Sensitisation to the respiratory tract: Lack of data. Skin sensitisation: Lack of data. Germ cell mutagenicity/Genotoxicity: Lack of data. Carcinogenicity: Lack of data. Reproductive toxicity: Reproductive toxicant - Category 1B = May damage fertility. May damage the unborn child. Effects on or via lactation: Lack of data. Specific target organ toxicity (single exposure): Lack of data. Specific target organ toxicity (repeated exposure): Lack of data. Aspiration hazard: Lack of data.

Other information: Information about ethylene glycol:  
sensitization: Not known to cause sensitization.  
Systemic effects:  
After latency period: fatigue, ataxia (coordination impairment), unconsciousness, damage of kidneys.  
Symptoms of poisoning may occur after inhalation of the heated substance's vapors, prolonged contact with the liquid and oral ingestion.  
Specific symptoms in animal studies:  
In high doses teratogenic. liver and kidney damage.

**Symptoms**

In case of ingestion: Nausea, vomiting, agitation, CNS disorders.

**12. Ecological information****Ecotoxicity**

Aquatic toxicity: Information about ethylene glycol:  
Algae toxicity:  
IC50 *Scenedesmus quadricauda*: > 10000 mg/L/7 d.  
Bacterial toxicity:  
EC50 *Pseudomonas putida*: > 10000 mg/L/16 h.  
EC5 *Microcystis aeruginosa*: 2000 mg/L/8 d.  
Daphnia toxicity:  
EC50 *Daphnia magna*: 74000 mg/L/24 h.  
Fish toxicity:  
LC50 *Leuciscus idus*: > 10000 mg/L/48 h.  
LC50 *Onchorhynchus mykiss*: > 18500 mg/L/96 h.  
Protozoa: EC5: *Entosiphon sulcatum*: > 10000 mg/L/72h

**Mobility in soil**

No data available

**Persistence and degradability**

Further details: Information about ethylene glycol:  
Biodegradation: 83 - 96 %/14 d.  
Product is readily biodegradable.

**Additional ecological information**

General information: Do not empty into drains.

**13. Disposal considerations****Product**

Recommendation: Dispose of waste according to applicable legislation.

**Package**

Recommendation: Dispose of waste according to applicable legislation. Non-contaminated packages may be recycled.



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

## Inner buffer HM TK blue

Material number 238555/238039

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## 14. Transport information

### 14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR:

Not restricted

### Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR:

not applicable

### Packing group

ADR/RID, IMDG, IATA-DGR:

not applicable

### Environmental hazards

Marine pollutant:

no

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

### USA: Department of Transportation (DOT)

Proper shipping name:

Not restricted

### Sea transport (IMDG)

Proper shipping name:

Not restricted

Marine pollutant:

no

### Air transport (IATA)

Proper shipping name:

Not restricted

### Further information

No dangerous good in sense of these transport regulations.

## 15. Regulatory information

### National regulations - U.S. Federal Regulations

Ethylene glycol:

TSCA Inventory: listed; EPA flags T

TSCA HPVC: not listed

Clean Air Act:

Hazardous Air Pollutants: yes

SOCMI Chemical: yes

Other Environmental Laws:

CERCLA: RQ 5000 lbs.

SARA Title III Section 313, Toxic Release: Conc. 1.0% / Threshold Standard

NIOSH Recommendations:

Occupational Health Guideline: 0272

Disodium tetraborate x 10 H<sub>2</sub>O:

TSCA Inventory: listed

TSCA HPVC: not listed

NIOSH Recommendations:

Occupational Health Guideline: 0058\*

### National regulations - U.S. State Regulations

Ethylene glycol: California Proposition 65 code: -  
Delaware Air Quality Management List:  
DRQ: 5000 - RQ State: Federal Regulations Apply  
Idaho Air Pollutant List:  
Title 585: AAC: 6.35 - EL: 0.846 - OEL: 127 - Title 586: -  
Maine Hazardous Air Pollutants:  
Me 2005: HAP - Hap Rpt: 2000  
Massachusetts Haz. Substance codes: 4 F9  
Minnesota Haz. Substance:  
Codes: A - Ratings: 7.26 - Status: Air Pollutant Title III. TRI.  
New Jersey RTK Hazardous Substance:  
DOT: 1142 - Sub No.: 0878 - TPQ: -  
New York List of Hazardous Substances:  
RQ-Air: 1 - RQ-Land: 1 - Note: No Note Associated with this chemical.  
Pennsylvania Haz. Substance code: E  
Washington Air Contaminant:  
Ceiling: 50 ppm - 125 mg

### National regulations - Great Britain

Hazchem-Code: -

## 16. Other information

Text for labeling:

Contains 50 - 80 % Ethylene glycol, 3 - 8 % Disodium tetraborate x 10 H<sub>2</sub>O. Safety data sheet available on request.

Hazard rating systems:



NFPA Hazard Rating:

Health: 2 (Moderate)  
Fire: 1 (Slight)  
Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 2 (Moderate) - Chronic effects  
Flammability: 1 (Slight)  
Physical Hazard: 0 (Minimal)  
Personal Protection: X = Consult your supervisor

HEALTH	*	2
FLAMMABILITY		1
PHYSICAL HAZARD		0
		X



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## Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
OEL: Occupational Exposure Limit Value  
AS/NZS: Australian Standards/New Zealand Standards  
CAS: Chemical Abstracts Service  
CFR: Code of Federal Regulations  
CLP: Classification, Labelling and Packaging  
CNS: Central Nervous System  
DMEL: Derived minimal effect level  
DNEL: Derived no-effect level  
EC50: Effective Concentration 50%  
EC: European Community  
EN: European Standard  
IATA: International Air Transport Association  
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
IMDG Code: International Maritime Dangerous Goods Code  
LC50: Median lethal concentration  
LD50: Lethal dose 50%  
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
OSHA: Occupational Safety and Health Administration  
PBT: Persistent, bioaccumulative and toxic  
PNEC: Predicted no-effect concentration  
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals  
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail  
SVHC: Substance of Very High Concern  
TLV: Threshold Limit Value  
vPvB: Very persistent and very bioaccumulative  
WEL: Workplace Exposure Limit  
CNS: Central Nervous System

Reason of change: Changes in section 1: Material number

Date of first version: 6/14/2011

**Department issuing data sheet**

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.