

SAFETY DATA SHEET

Frag/AT Buffer

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

1.1. Product identifier

Trade name: Frag/AT Buffer
Product no.: W0004

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

Relevant identified uses of the substance or mixture: Laboratory use
Restricted to professional users.

Uses advised against: in vivo

1.3. Details of the supplier of the safety data sheet

Company and address: **Watchmaker Genomics, Inc.**
5744 Central Ave, Ste 100
CO 80301 Boulder
USA
T: +1 720-543-2174

E-mail: info@watchmakergenomics.com

Revision: 12/04/2024

SDS Version: 1.0

1.4. Emergency telephone number

In urgent situations: Call 112 and request the poison information centre. (24h service)
Giftnotrufzentrale Berlin, Emergency telephone: +49 30 19240 (day and night)
See also section 4 for first aid measures.

SECTION 2: HAZARDS IDENTIFICATION

Classified according to Regulation (EC) No. 1272/2008 (CLP).

2.1. Classification of the substance or mixture

Acute Tox. 3; H301, Toxic if swallowed.
STOT SE 2; H371, May cause damage to organs.
Aquatic Chronic 3; H412, Harmful to aquatic life with long lasting effects.

2.2. Label elements

Hazard pictogram(s):



Signal word: Danger

Hazard statement(s): Toxic if swallowed. (H301)
May cause damage to organs. (H371)
Harmful to aquatic life with long lasting effects. (H412)

Precautionary statement(s):

<i>General:</i>	-
<i>Prevention:</i>	Do not breathe vapour/mist. (P260) Wash hands and exposed skin thoroughly after handling. (P264) Avoid release to the environment. (P273)
<i>Response:</i>	IF SWALLOWED: Immediately call a POISON CENTER/doctor. (P301+P310) Specific treatment (see instructions on this label). (P321)
<i>Storage:</i>	-
<i>Disposal:</i>	Dispose of contents/container in accordance with local regulation (P501)
<i>Hazardous substances:</i>	Tetramethylammonium chloride
<i>Additional labelling:</i>	Not applicable.

2.3. Other hazards

<i>Additional warnings:</i>	This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification. This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.
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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
Tromethamine	CAS No.: 77-86-1 EC No.: 201-064-4 REACH: 01-2119957659-16-XXXX Index No.:	3-5%		
Tetramethylammonium chloride	CAS No.: 75-57-0 EC No.: 200-880-8 REACH: 01-2119970924-26-XXXX Index No.:	1-3%	Acute Tox. 2, H300 Acute Tox. 3, H311 Skin Irrit. 2, H315 STOT SE 1, H370 (Central nervous system) Aquatic Chronic 2, H411	

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

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SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information:

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation:

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact:

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

If skin irritation occurs: Get medical advice/attention.

Eye contact:

If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.

Ingestion:

In the case of ingestion, contact a doctor immediately. If the person is conscious, give them water. DO NOT try to induce vomiting unless this is recommended by a doctor. Hold head facing down to prevent vomit from returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.

Burns:

Not applicable.

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

None known.

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

IF exposed or concerned:

Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Not applicable.

5.2. Special hazards arising from the substance or mixture

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Halogenated compounds
Nitrogen oxides (NO_x)
Carbon oxides (CO / CO₂)
Some metal oxides

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures**

Avoid direct contact with spilled substances.
Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Joint storage is permitted for products in storage classes: 2B, 6.1A, 6.1B, 6.1C, 6.1D, 8A, 8B, 10, 11, 12, 13

May only be stored together products in storage classes: 3, 4.1B, 4.2, 4.3, 5.1B provided that this will not lead to a substantial increase in risk. A substantial increase in risk can be prevented through separate storage.

Joint storage is NOT allowed for products in all other storage classes.

Recommended storage material: Keep only in original packaging.

Storage class: Storage class 6.1 D (Non-combustible acutely toxic substances or substances with chronic effects).
 TRGS 510 - Storage of hazardous substances in non-stationary containers.

Storage temperature: -25 °C to -15 °C

Incompatible materials: No specific requirements

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No substances are listed in the national list of substances with an occupational exposure limit.

DNEL

Tetramethylammonium chloride

Duration:	Route of exposure:	DNEL:
Long term – Systemic effects - General population	Dermal	250 µg/kgbw/day
Long term – Systemic effects - Workers	Dermal	400 µg/kgbw/day
Long term – Systemic effects - General population	Inhalation	1.76 mg/m ³
Long term – Systemic effects - Workers	Inhalation	2.9 mg/m ³
Long term – Systemic effects - General population	Oral	250 µg/kgbw/day

Tromethamine

Duration:	Route of exposure:	DNEL:
Long term – Systemic effects - Workers	Dermal	166.7 mg/kg bw/day
Long term – Systemic effects - Workers	Inhalation	117.5 mg/m ³

PNEC

Tetramethylammonium chloride

Route of exposure:	Duration of Exposure:	PNEC:
Freshwater		600 ng/L
Freshwater sediment		35 µg/kg
Intermittent release (freshwater)		36 µg/L
Marine water		60 ng/L
Marine water sediment		3.5 µg/kg
Sewage treatment plant		6 mg/L
Soil		6.6 µg/kg

Tromethamine

Route of exposure:	Duration of Exposure:	PNEC:
Sewage treatment plant		300 mg/L

8.2. Exposure controls

Apply general control to prevent unnecessary exposure

<i>General recommendations:</i>	When handling chemical products, do not eat, drink or smoke.
<i>Exposure scenarios:</i>	There are no exposure scenarios implemented for this product.
<i>Exposure limits:</i>	Occupational exposure limits have not been defined for the substances in this product.
<i>Appropriate technical measures:</i>	Apply standard precautions during use of the product. Avoid inhalation of vapours.
<i>Hygiene measures:</i>	Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse.
<i>Measures to avoid environmental exposure:</i>	Keep damming materials near the workplace. If possible, collect spillage during work.

Individual protection measures, such as personal protective equipment

<i>Generally:</i>	Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).
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Respiratory Equipment:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

Skin protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent). Appropriate techniques should be used to remove used gloves and contaminated clothing.

Hand protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves.

Eye protection:

Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<i>Physical state:</i>	Liquid
<i>Colour:</i>	Clear
<i>Odour / Odour threshold:</i>	Mild
<i>pH:</i>	8.3
<i>Density (g/cm³):</i>	No data available
<i>Relative density:</i>	No data available

<i>Kinematic viscosity:</i>	No data available
<i>Particle characteristics:</i>	Does not apply to liquids.

Phase changes

<i>Melting point/Freezing point (°C):</i>	No data available
<i>Softening point/range (waxes and pastes) (°C):</i>	Does not apply to liquids.
<i>Boiling point (°C):</i>	No data available
<i>Vapour pressure:</i>	No data available
<i>Relative vapour density:</i>	No data available
<i>Decomposition temperature (°C):</i>	No data available

Data on fire and explosion hazards

<i>Flash point (°C):</i>	No data available
<i>Flammability (°C):</i>	No data available
<i>Auto-ignition temperature (°C):</i>	No data available
<i>Lower and upper explosion limit (% v/v):</i>	No data available

Solubility

<i>Solubility in water:</i>	No data available
<i>n-octanol/water coefficient (LogKow):</i>	No data available
<i>Solubility in fat (g/L):</i>	No data available

9.2. Other information

<i>Evaporation rate (n-butylacetate = 100):</i>	No data available
<i>Other physical and chemical parameters:</i>	No data available.
<i>Oxidizing properties:</i>	No data available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

Not reactive under recommended handling and storage conditions.

10.2. Chemical stability

Stable under recommended handling and storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions are not anticipated under recommended conditions of handling and storage.

10.4. Conditions to avoid

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

10.5. Incompatible materials

No specific requirements

10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Toxic if swallowed.

Skin corrosion/irritation

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

Serious eye damage/irritation

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

Respiratory sensitisation

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

Skin sensitisation

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

Germ cell mutagenicity

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

Carcinogenicity

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

Reproductive toxicity

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

STOT-single exposure

May cause damage to organs.

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.

11.2. Information on other hazards**Long term effects**

None known.

Endocrine disrupting properties

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

Other information

None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

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

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and

vPvB classification.

12.6. Endocrine disrupting properties

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

12.7. Other adverse effects

This product contains substances that are toxic to the environment. May result in adverse effects to aquatic organisms.

This product contains substances, which may cause adverse long-term effects to the aquatic environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste.

HP 4 - Irritant (skin irritation and eye damage)

HP 5 - Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

HP 6 - Acute toxicity

HP 14 - Ecotoxic

Dispose of contents/container to an approved waste disposal plant.

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

EWC code:

Not applicable.

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: TRANSPORT INFORMATION

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR	Not regulated	-	Transport hazard class: None	None	No	See below for additional information.
IMDG	Not regulated	-	Transport hazard class: None	None	No	See below for additional information.
IATA	Not regulated	-	Transport hazard class: None	None	No	See below for additional information.

* Packing group

** Environmental hazards

Additional information

Not dangerous goods according to ADR, IATA and IMDG.

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: REGULATORY INFORMATION

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

Restrictions for application:

Restricted to professional users.

People under the age of 18 shall not be exposed to this product.

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

Demands for specific education:

No specific requirements.

SEVESO - Categories / dangerous substances:

Not applicable.

Additional information:

WGK class: WGK 2

Sources:

Law for the Protection of Working Youth (Youth Employment Protection Act - JArbSchG).

Law on the protection of mothers at work, in training and in studies (Mutterschutzgesetz - MuSchG) 23.05.2017 (BGBl. I S. 1228).

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP).

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

No

SECTION 16: OTHER INFORMATION

Full text of H-phrases as mentioned in section 3

H300, Fatal if swallowed.

H311, Toxic in contact with skin.

H315, Causes skin irritation.

H370, Causes damage to organs. (Central nervous system)

H411, Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CE = Conformité Européenne (European conformity)
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EuPCS = European Product Categorisation System
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

The classification of the substance/mixture in regard of environmental hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

The safety data sheet is validated by

Watchmaker Genomics, Inc.

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.
Information in this safety data sheet cannot be used as a product specification.

Country-language: DE-en

This product has been classified in accordance with EC No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and EC No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.