



# TETRA PureFlow Ultra-Pure Zinc Bromide

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 02/20/2015

Revision date: 03/24/2021

Version: 2.0

### SECTION 1: Identification

#### 1.1. Identification

Product name : TETRA PureFlow Ultra-Pure Zinc Bromide

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

##### Manufacturer

TETRA Technologies, Inc  
24955 Interstate 45 North  
The Woodlands, TX 77380 - USA  
T 281-367-1983  
[sds@tetrathec.com](mailto:sds@tetrathec.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 for US/ 703-527-3887 outside US

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Acute toxicity (oral) Category 4	Harmful if swallowed
Skin corrosion/irritation Category 1B	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	Causes serious eye damage
Skin sensitization, Category 1	May cause an allergic skin reaction
Hazardous to the aquatic environment - Acute Hazard Category 2	Toxic to aquatic life
Hazardous to the aquatic environment - Chronic Hazard Category 2	Toxic to aquatic life with long lasting effects

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

Harmful if swallowed  
Causes severe skin burns and eye damage  
May cause an allergic skin reaction  
Causes serious eye damage  
Toxic to aquatic life  
Toxic to aquatic life with long lasting effects

Precautionary statements (GHS US) :

Do not breathe dust/fume/gas/mist/vapors/spray.  
Avoid breathing dust/fume/gas/mist/vapors/spray.  
Wash hands, forearms and face thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Contaminated work clothing must not be allowed out of the workplace.  
Avoid release to the environment.  
Wear protective gloves/protective clothing/eye protection/face protection.  
If swallowed: Call a poison center or doctor if you feel unwell.  
If swallowed: rinse mouth. Do NOT induce vomiting.  
If on skin: Wash with plenty of water.  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If inhaled: Remove person to fresh air and keep comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a poison center or doctor.  
Specific treatment (see supplemental first aid instruction on this label).

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Rinse mouth.  
If skin irritation or rash occurs: Get medical advice/attention.  
Wash contaminated clothing before reuse.  
Collect spillage.  
Store locked up.  
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name : TETRA PureFlow Ultra-Pure Zinc Bromide

Name	Product identifier	%	GHS US classification
Zinc bromide	(CAS-No.) 7699-45-8	> 99	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

Full text of hazard classes and H-statements : see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.  
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.  
First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact : Burns. May cause an allergic skin reaction.  
Symptoms/effects after eye contact : Serious damage to eyes.  
Symptoms/effects after ingestion : Burns.

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

### 5.2. Specific hazards arising from the chemical

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

### 5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray.

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### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.  
Methods for cleaning up : Take up liquid spill into absorbent material.  
Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Wear personal protective equipment.  
Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Zinc bromide (7699-45-8)

Not applicable

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid  
Appearance : Liquid.

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	: Colourless to light yellow
	: odorless
Odor threshold	: No data available
pH	: 1 – 2
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: 275 °C 75% solution
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non-flammable Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 2.3 for 75% solution
Molecular mass	: 225.198 g/mol
Solubility	: Soluble in alcohols. Soluble in acetone. Soluble in ether. Soluble in ammonium hydroxide.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

TETRA PureFlow Ultra-Pure Zinc Bromide	
ATE US (oral)	1491.919 mg/kg body weight
Zinc bromide (7699-45-8)	
LD50 oral rat	1477 mg/kg body weight (EPA OTS 798.1175, Rat, Male / female, Experimental value, Oral)
LD50 dermal rabbit	> 2000 mg/kg Source: ECHA
ATE US (oral)	1477 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns.  
pH: 1 – 2

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Serious eye damage/irritation	: Causes serious eye damage. pH: 1 – 2
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

Zinc bromide (7699-45-8)	
NOAEL (oral, rat, 90 days)	31.52 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Aspiration hazard	: Not classified
Symptoms/effects after skin contact	: Burns. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: Burns.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Zinc bromide (7699-45-8)	
LC50 fish 1	115.9 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Scophthalmus maximus, Semi-static system, Salt water, Experimental value)
EC50 Daphnia 1	6.7 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
EC50 other aquatic organisms 1	2.4 mg/l Test organisms (species): other aquatic arthropod: Acartia tonsa

### 12.2. Persistence and degradability

Zinc bromide (7699-45-8)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

### 12.3. Bioaccumulative potential

Zinc bromide (7699-45-8)	
Partition coefficient n-octanol/water (Log Pow)	-0.98 (Calculated, 20 °C)
Bioaccumulative potential	Not bioaccumulative.

### 12.4. Mobility in soil

Zinc bromide (7699-45-8)	
Ecology - soil	No (test) data on mobility of the substance available.

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

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### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN3264 Corrosive liquid, acidic, inorganic, n.o.s. (contains Zinc bromide), 8, II  
UN-No.(DOT) : UN3264  
Proper Shipping Name (DOT) : Corrosive liquid, acidic, inorganic, n.o.s.  
contains Zinc bromide  
Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136  
Packing group (DOT) : II - Medium Danger  
Hazard labels (DOT) : 8 - Corrosive



Dangerous for the environment : Yes  
Marine pollutant : Yes



DOT Packaging Non Bulk (49 CFR 173.xxx) : 202  
DOT Packaging Bulk (49 CFR 173.xxx) : 242  
DOT Special Provisions (49 CFR 172.102) : 386 - Notwithstanding the provisions of §177.834(l) of this subchapter, cargo heaters may be used when weather conditions are such that the freezing of a wetted explosive material is likely. Shipments must be made by private, leased or contract carrier vehicles under exclusive use of the offeror. Cargo heaters must be reverse refrigeration (heat pump) units. Shipments made in accordance with this Special provision are excepted from the requirements of §173.60(b)(4) of this subchapter.  
B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.  
IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31H21). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.  
T11 - 6 178.274(d)(2) Normal..... 178.275(d)(3)  
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where:  $t_r$  is the maximum mean bulk temperature during transport,  $t_f$  is the temperature in degrees celsius of the liquid during filling, and  $a$  is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation ( $t_r$ ) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where:  $d_{15}$  and  $d_{50}$  are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.  
TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.  
DOT Packaging Exceptions (49 CFR 173.xxx) : 154  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L  
DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.  
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"  
Emergency Response Guide (ERG) Number : 154  
Other information : No supplementary information available.

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### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Transport document description (IMDG) : UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (contains Zinc bromide), 8, II  
UN-No. (IMDG) : 3264  
Proper Shipping Name (IMDG) : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
Class (IMDG) : 8 - Corrosive substances  
Packing group (IMDG) : II - substances presenting medium danger  
Limited quantities (IMDG) : 1 L  
Marine pollutant : Yes



### Air transport

Transport document description (IATA) : UN 3264 Corrosive liquid, acidic, inorganic, n.o.s. (contains Zinc bromide), 8, II  
UN-No. (IATA) : 3264  
Proper Shipping Name (IATA) : Corrosive liquid, acidic, inorganic, n.o.s.  
Class (IATA) : 8 - Corrosives  
Packing group (IATA) : II - Medium Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Zinc bromide (7699-45-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

CERCLA RQ	1000 lb
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### 15.2. International regulations

#### CANADA

#### Zinc bromide (7699-45-8)

Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

No additional information available

### National regulations

No additional information available

### 15.3. US State regulations

#### Zinc bromide (7699-45-8)

U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

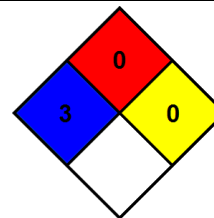
Revision date : 03/05/2021

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NFPA health hazard	: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.
NFPA fire hazard	: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.



Indication of changes:  
Transport information.

References ECHA registered substances database  
HSDB® - Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity National Toxicology Program (NTP) Report on Carcinogens Registry of Toxic Effects of Chemical Substances (RTECS)

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