JSC AVIABOR

MATERIAL SAFETY DATA SHEET (MSDS)
according to Regulation (EC) No. 1907/2006
Version 2.1 Revision Date 11.09.2018

1.0 Identification of the substance/preparation and of the company/enterprise

1.1 Product identifiers : Tris(2-ethylhexyl) borate
EINECS : 219-581-9
CAS : 2467-13-2

1.2 Relevant identified uses of the substance or mixture and uses advised against
Laboratory chemicals, manufacture of substances

1.3 Details of the supplier of the safety data sheet
JSC AVIABOR, Nizhny Novgorod Region
606000 Dzerzhinsk, Russia
Tel: (+7)-8313-249 727, Fax: (+7)-8313-249 767
Only Representative – Espace Chemicals GmbH
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1.4 Emergency telephone number: (+7)-8313-249 750/ 630

2.0 Hazards Identification

2.1 Classification of the substance or mixture
A colourless transparent liquid hydrolyzed by wet air into alcohol and boric acid. Avoid any inhalation, contact with skin and eyes. No manipulations with the product are allowed until precautions recommended by the manufacturer are read and understood.

Regulation (EC) No 1272/2008 Annex VI Table

Classification		Labelling		
Hazard Class and Category Code(s)	Hazard Statement Code(s)	Pictogram Signal Word Code(s)	Hazard Statement Code(s)	Suppl. Hazard Statement Code(s)
Eye Irrit., 2 Aquatic Chronic, 3	H319 H412	 Warning	H319 H412	-

2.2 Label elements
Hazard Statement(s):
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long-lasting effects.
Precautionary statement(s):
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.

3.0 Composition/information on ingredients

Tris(2-ethylhexyl) borate : > 98 wt%
Trade names/Synonyms : Tris(2-ethylhexyl) orthoborate
Chemical formula : $C_{24}H_{51}BO_3$
CAS : 2467-13-2
EINECS : 219-581-9
Molar mass : 398.48 g/mol
Classification : Eye Irrit. 2; Aquatic Chronic 3; H319, H412

Impurities:

2-Ethyl-1-hexanol	: < 2 wt%
Trade names/Synonyms	: 2-Ethylhexanol, Isooctyl alcohol
Chemical formula	: $C_8H_{18}O$
CAS	: 104-76-7
EINECS	: 203-234-3
Molar mass	: 130.23 g/mol
Classification	: Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H332, H315, H319, H335

4.0 First Aid Measures

4.1 Description of first aid measures

After skin contact

Take off contaminated clothing and wash before re-use. Wash with soap and water. If skin irritation occurs, get medical attention.

After eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

After inhalation

Remove exposed person to fresh air if adverse effects are observed.

After ingestion

Do NOT induce vomiting. Aspiration of material due to vomiting can cause chemical pneumonitis which can be fatal. If vomiting occurs naturally, the casualty should lean forward to reduce the risk of aspiration. Rinse mouth.

Call a POISON CENTER/doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed

no data available

5.0 Fire Fighting Measures

5.1 Extinguishing media

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable extinguishing media

CO_2, dry chemical, foam, water spray, water fog.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Special hazards arising from the substance or mixture

A solid stream of water will spread the burning material. Material creates a special hazard because it floats on water. See section 10 for additional information.

5.3 Precautions for fire-fighters

Recommend wearing self-contained breathing apparatus.

5.4 Further information

no data available

6.0 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations.

6.2 Environmental precautions

Avoid release to the environment. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

6.3 Methods and materials for containment and cleaning up

Residual liquid can be absorbed on inert material. Stop the flow of material, if this is without risk.

Prevent entry into waterways, sewer, basements or confined areas.

6.4 Reference to other sections

For disposal see section 13.

7.0 Handling and Storage

7.1 Precautions for safe handling

Avoid contact with eyes. Observe good industrial hygiene practices.

Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid environmental contamination.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store away from incompatible materials.

7.3 Specific end uses

no data available

8.0 Exposure Control and Personal Protection

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

refer to section 7

Personal protective equipment

Normal use and handling:

Respiratory	: breathing mask or breathing apparatus
Hand protection	: rubber gloves
Eye protection	: closely fitting goggles
Skin protection	: protective clothing

Emergency handling

Full protective clothing, including gloves and boots, self-contained breathing apparatus.

Technical equipment

Closed system, welded pipelines and other air-tight constructions.

Industrial hygiene

When handling the product provide an effective exhaust ventilation in a working place.

Keep working clothes in a separate place. Wash hands before breaks and after working with the product. Change the contaminated clothes, take it to the laundry regularly.

Obligatory take shower after work.

9.0 Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Colourless transparent liquid.

pH value at 10 g/l H_2O	: not available
Boiling point	: 272.8°C
Flash point	: 119 °C
Auto-ignition temperature	: 286 °C
Flammability	: not available
Oxidizing properties	: not available
Explosive properties	: not available
Lower limit of the melting range	: not available
Vapour pressure	: 0.001 Pa (25^0C)
Partition coefficient	: 8.19
Viscosity	: not available
Vapour density	: not available
Density	: 859 kg/m³
Bulk density	: not available
Decomposition temp.	: not available
Surface tension	: not available
Conductivity	: not available

	Enthalpy of Vaporization	: not available
	Solubility in water	: hydrolyzes into 2-ethylhexanol and boric acid
	Solubility	: solubility in organic solvents/fat solubility

9.2 Other safety information

Ignition temperature	: not identified
Melting point	: not available
Refractivity index	: not available

10.0 Stability and Reactivity

10.1 Reactivity
no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts with water.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions: carbon oxides, borane/boron oxides.

11.0 Toxicological Information

11.1 Information on toxicological effects

Acute toxicity
LD_{50} Oral (rat) 2,000 mg/kg

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Eyes (rabbit) – Mild eye irritation

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
IARC: No component of this product presents at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available

Specific target organ toxicity – single exposure
No data available

Specific target organ toxicity – repeated exposure
No data available

Aspiration hazard
No data available

Potential health effects
- After skin contact : irritating
- After eye contact : irritating

Additional information
RTECS: ED5800000

12.0 Ecological Information

12.1 Toxicity

12.1.1 Aquatic toxicity **:** LC50 21.17 mg/l (96 h) for *brachydanio rerio*

12.2	**Persistence and degradability**	: N/A
12.3	**Bioaccumulative potential**	: N/A
12.4	**Mobility in soil**	: N/A
12.5	**Results of PBT and vPvB assessment**	: N/A
12.6	**Other adverse effects**	: N/A

13.0 Disposal Consideration

13.1 Waste treatment methods

Disposal methods:

Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

Dispose of packaging or containers in accordance with local, regional, national and international regulations. Empty container contains product residue which may exhibit hazards of product.

Contaminated packaging

Container packaging may exhibit hazards.

14.0 Transport Information

14.1 UN-Number

Not regulated as a hazardous material.

14.2 UN proper shipping name

Tris (2-ethylhexyl) borate

14.3 Transport hazard class(es)

GGVS/GGVE/ADR/RID: Not regulated
IMO/GGVSee: Not regulated
ICAO/IATA: Not regulated

14.4 Packaging group

GGVS/GGVE/ADR/RID: No IMO/GGVSee: No ICAO/IATA: No

14.5 Environmental hazards

GGVS/GGVE/ADR/RID: No IMO/GGVSee: No ICAO/IATA: No

14.6 Special precautions for user

See section 7.0

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

The substance is not intended to be transported in bulk.

15.0 Regulatory Information

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

no data available

15.2 Chemical Safety Assessment

no data available

16.0 Other Information

This information is to the best of Aviabor's current knowledge and is intended to describe the product only in terms of health and safety and environmental requirements. Since the conditions of use are outside our control, any recommendations or suggestions are made without guarantee and we disclaim any liability for loss or damage suffered from use of this information. Customers must satisfy themselves that the product is suitable for a particular purpose. Furthermore, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing patents.

The data does not signify any warranty with regards to the product properties.