SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 05-Oct-2023
Revision Number 5.06

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	ImmunoStar® Zeta
Product Code	291-72401,297-72403,295-72404

Supplier
FUJIFILM Wako Pure Chemical Corporation
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
Phone: +81-6-6203-3741
Fax: +81-6-6203-2029

Emergency telephone number +81-6-6203-3741 / +81-3-3270-8571
Recommended uses For research use only
Restrictions on use Seek expert judgment when using for purposes other than those recommended.

Section 2: HAZARDS IDENTIFICATION

GHS classification
Classification of the substance or mixture

Serious eye damage/eye irritation	Category 2B
Reproductive Toxicity	Category 2

Pictograms

Signal word Warning

Hazard statements
H320 - Causes eye irritation
H361 - Suspected of damaging fertility or the unborn child

Precautionary statements-(Prevention)
- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling

Precautionary statements-(Response)
- IF exposed or concerned: Get medical advice/attention
- IF IN EYES: 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

Precautionary statements-(Storage)
- Store locked up

Precautionary statements-(Disposal)
- Dispose of contents/container to an approved waste disposal plant

Others
Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Kit (Set of mixtures)

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Chemiluminescence Solution A	-	N/A	N/A	N/A	N/A-29-7241
Chemiluminescence Solution B	-	N/A	N/A	N/A	N/A-29-7242

Note on ISHL No.: * in the table means announced chemical substances.

Impurities and/or Additives： Not applicable

Hazardous Component: Boric Acid <1%, Sodium Hydroxide <1%, 2-Amino-2-Hydroxymethyl-1,3-Propanediol <5%, Acetic Acid <1%

Substances Remarks: The composition considered to be hazardous are listed in the above. The remaining ingredients are not hazardous substances, or exist at below reportable level.

Section 4: FIRST AID MEASURES

Inhalation
Remove to fresh air. If symptoms persist, call a physician.

Skin contact
Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion
Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders
Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media
Water spray (fog), Carbon dioxide (CO2), Foam, Extinguishing powder, Sand

Unsuitable extinguishing media
No information available

Specific hazards arising from the chemical product
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Special extinguishing method
No information available

Special protective actions for fire-fighters
Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions
To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminent and methods and materials for cleaning up
Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Recoverly, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling

Technical measures

Flammable. Avoid contact with high temperature objects, spark, and strong oxidizing agents. Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity)

Storage

Safe storage conditions

Storage conditions Keep container protect from light tightly closed. Store in a cool (2-10 °C) place.

Safe packaging material Polyethylene

Incompatible substances Strong oxidizing agents

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Boric acid 10043-35-3	N/A	N/A	STEL: 6 mg/m^3 inhalable particulate matter TWA: 2 mg/m^3 inhalable particulate matter
Acetic Acid 64-19-7	TWA: 10 ppm OEL TWA: 25 mg/m^3 OEL	N/A	STEL: 15 ppm TWA: 10 ppm
Sodium Hydroxide 1310-73-2	2mg/m^3	N/A	Ceiling: 2 mg/m^3

Personal protective equipment

Respiratory protection Protective mask

Hand protection chemical protective gloves (JIS T 8116)

Eye protection protective eyeglasses or chemical safety goggles

Skin and body protection Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form

Appearance liquid

Odor no data available

Melting point/freezing point no data available

Boiling point, initial boiling point and boiling range no data available

Flammability no data available

Evaporation rate:	no data available
Flammability (solid, gas):	no data available
Upper/lower flammability or explosive limits	
Upper:	no data available
Lower:	no data available
Flash point	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH	no data available
Viscosity (coefficient of viscosity)	no data available
Dynamic viscosity	no data available
Solubilities	No data available
n-Octanol/water partition coefficient:(log Pow)	no data available
Vapour pressure	no data available
Specific Gravity / Relative density	no data available
Vapour density	no data available
Particle characteristics	no data available

Section 10: STABILITY AND REACTIVITY

Stability

Reactivity	no data available
Chemical stability	May be altered by light.

Hazardous reactions

None under normal processing

Conditions to avoid

Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon monooxide (CO), Carbon dioxide (CO_2), Nitrogen oxides (NOx), Boron oxide

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Boric acid	2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h
Acetic Acid	3310 mg/kg (Rat)	1060 mg/kg (Rabbit)	N/A

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Boric acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Boric acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS Classification results.
Acetic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Boric acid	Based on the NITE GHS classification results.

Acetic Acid	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Boric acid	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Boric acid	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagencity source information
Boric acid	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Boric acid	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Boric acid 10043-35-3	-	-	-	-

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Boric acid	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Boric acid	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Boric acid	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Boric acid	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Boric acid	*N/A*	*LC50:Carassius auratus 1020 mg/L 72 h*	*EC50:Daphnia magna 115 - 153 mg/L 48 h*
Acetic Acid	*N/A*	*LC50 : Pimephales promelas 79 mg/L 96 h*	*EC50 : Daphnia magna 65000 ug/L 48 h*
Sodium Hydroxide	*N/A*	*N/A*	*LC50 : Ceriodaphnia pulchella 40 mg/L 48 h*

Other data

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Boric acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Sodium Hydroxide	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Persistence and degradability No information available
Bioaccumulative potential No information available
Mobility in soil No information available
Hazard to the ozone layer No information available

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues
Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated container and contaminated packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

ADR/RID Not regulated
UN number -
Proper shipping name:
UN classfication
Subsidiary hazard class
Packing group
Marine pollutant Not applicable

IMDG Not regulated
UN number -
Proper shipping name:
UN classfication
Subsidiary hazard class
Packing group
Marine pollutant (Sea) Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

IATA Not regulated
UN number -
Proper shipping name:
UN classfication
Subsidiary hazard class
Packing group
Environmentally Hazardous Substance Not applicable

Section 15: REGULATORY INFORMATION

Japanese regulations
Fire Service Act Not applicable
Poisonous and Deleterious Substances Control Law Not applicable
Industrial Safety and Health Act Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18)
Notifiable Substances (Law Art.57-2, Enforcement Oder Art.18-2 Attached Table

	No.9)No.544
Regulations for the carriage and storage of dangerous goods in ship	Not applicable
Civil Aeronautics Law	Not applicable
Marine Pollution Prevention Law	Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Z
Pollutant Release and Transfer Register Law (2023.4.1-)	Not applicable
Water Pollution Control Act	Harmful Substances (Law Art.2, Enforcement Order Art.2, Ordinace Designating Wastewater Standards Art.1) Specified substances(Law Art.2 Para.4, Enforcement Order Art.3-3)
Export Trade Control Order	Not applicable
Air Pollution Control Law	Hazardous Air Pollutants
Soil Contamination Control Law	Designated Hazardous Substances

Industrial Safety and Health Law

Law Name	Chemical Name in Regulation	Ordinance Number	Weight %
Notifiable Substances (Law Art.57-2, Enforcement Oder Art.18-2 Attached Table No.9, and Law Art.56-1)	Boric acid and its sodium salt	544	<1

Section 16: OTHER INFORMATION

Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)
http://www.safe.nite.go.jp/japan/db.html
IATA dangerous Goods Regulations
RTECS:Registry of Toxic Effects of Chemical Substances
Japan Industrial Safety and Health Association GHS Model SDS
Dictionary of Synthetic Oraganic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.
Chemical Dictionary, Kyouritsu Publishing Co., Ltd.
etc

Record of SDS revisions

The following contents were revised. Prodauct and company Identification. Exposure controls/personal protection. Regulatory information.

Disclaimer

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, 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 or in any process, unless specified in the text.
GHS Classification is according to JIS Z 7252:2019. *JIS: Japanese Industrial Standards

End of Safety Data Sheet