WATSON INTERNATIONAL LTD

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Electrolyte for Double-layer Capacitor TEMABF4+ACN

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Watson International Ltd
Room 1518, Asia Pacific Plaza,
NO. 18, Zhaofeng Road, Kunshan City,
Jiangsu Province, China. 215332

Telephone : +86-512-81867260/70/80
Fax : +86-512-81867260/70/80-3

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 4), H312
Eye irritation (Category 2A), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.

P243	Take precautionary measures against static discharge.
P260	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352	IF ON SKIN, wash with plenty of water.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	If exposed or cencerned: Get medical advice/attention.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before use.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Locked in a storage place.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Pure substance/Mixture: Mixture		
Name: /		
Synonyms: /		
Formula: /		
Components:		
Chemical Name	**Common Name**	**CAS No.**
ACN **TEMA**	**Acetonitrile** **Triethylmethylammonium tetrafluoroborate**	**75-05-8** **69444-47-9**

4. FIRST AID MEASURES

4.1 Description of first aid measures

In case of eye contact

Open the upper and lower eyelid immediately, and wash the eye with plenty of fresh water or physiological saline for at least 15 minutes and refer to the doctor.If irritation persists, seek medical attention.

In case of skin contact

Take off the polluted clothes and wash the skin thoroughly with warm soap water or fresh water. The medical treatment should be taken if needed.

If inhaled

Get away from the site and go to the fresh air area, and keep the respiratory tract unobstructed. If the sufferer has difficulty in breathing, the oxygen should be given and refer to the doctor.

If swallowed

If ingestion occurred, the patient cannot be taken the artificial respiration, and the appropriate medical equipment for treatment should be adopted.

4.2 Most important symptoms and effects, both acute and delayed

After inhaling the cause headache, dizziness, weakness, nausea and breathing difficulties. Prolonged and repeated contact of skin irritation.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Foam, dry powder fire extinguishers, water mist, dry sand and mud.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Special fire danger may encounter when extinguishing

Highly flammable liquid and vapor. Decomposition at high temperature may produce toxic gases.
Severe reactions may cause fire and explosion.When the vapour contacts with fire, it may be ignited.
Container may explode when heated.Liquid leakage may cause fire/explosion.

5.4 Special protective equipment for firefighters

Full-mask air purifying respirator with organic steam filter box, portable respirator, fire-resistance clothes.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Do not touch the leaking or damaged containers if no proper protective measures is equipped.
Do not clean or handle it with no professional supervision.Remove all sources of ignition.
Use vapour to control the foam and reduce the vapour.Avoid breathing vapors, mist or gas.
Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions

Avoid the entering of substances into rivers, sewers, basements and other confined spaces.

6.3 Methods and materials for containment and cleaning up

Use inert materials(such as dry sand or soil) to absorb the chemical wastes, and put them in the container.
Use detergents and water to wash the contaminated area after the waste is absorbed.
Use clean and explosion-proof tools to collect the materials.

6.4 Preventive measures to prevent secondary hazards

No data available

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use, read and understand all the safety precautions. Use explosion-proof electrical, ventilation, lighting equipment.Use non-sparking tools.Use static-proof electrical facilities. Wash the hands thoroughly after handling. Do not eat, drink or smoke when contacting this product.The handling of the residual materials is included in this manual and the preventive measures should be carried out.Avoid long-term or repeated skin exposure.Do not enter if the storage area has no adequate ventilation.Please avoid the high temperature.

7.2 Conditions for safe storage, including any incompatibilities

Safe storage(including the conditions to be avoided). Store in a well-ventilated and cool place.
Keep it sealed. The empty containers should be returned promptly and recycled.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure limits

ACGIH regulations: TWA 20ppm.
Korean regulations: 20ppm 33mg/m3.
Biological exposure limits: No data available

8.2 Engineering control

Process isolation, local exhaust and ventilation and reduce the content in the air and other control methods. The shower equipment should be equipped at the storage and using place.

8.3 Personal protective equipment

Eye/face protection

Avoid eye contact. Wear unvented goggles during operations in which exposure is likely. Wear full-face shield.

Skin and body protection

Avoid skin contact. A pair of gloves made from the following materials is recommended: butyl rubber. Use one or more of the following personal protection items as necessary to prevent skin contact: apron or coveralls.

Respiratory protection

Avoid breathing of airborne material. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half-mask organic vapor respirator with dust/mist pre-filter, full-face organic vapor respirator with dust/mist pre-filter.

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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: clear, liquid Colour: colorless to pale yellow
b)	Odour	Slight pungent odor
c)	Odour Threshold	No data available
d)	pH	6-8
e)	Melting point/freezing point	Melting point/range: -40 °C
f)	Initial boiling point and boiling range	Around 81 °C
g)	Flash point	9.8 °C
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	0.93 g/mL at 25 °C
n)	Water solubility	Soluble in water
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available
u)	Flammability	Highly flammable

10. STABILITY AND REACTIVITY

10.1 Stability

Flammable liquids.
Severe reactions may cause fire and explosion.
May cause explosion when the container is heated.
Vapour can form explosive mixtures with air.
It may generate irritating, corrosive and toxic gases in fire.
It may produce toxic gases at high temperature.

10.2 Hazard reactions may occur under special state.

Burn or explosion in caught on fire

10.3 Materials to avoid

Combustible, Reducing agent, Antioxidant.

10.4 Conditions to avoid

Sparkles, Flames, Heat and Smoking.

10.5 Hazardous decomposition products

It may generate irritating and highly toxic gas through thermal decomposition and burning.

11. TOXICOLOGICAL INFORMATION

11.1 Routes of exposure/symptoms

Respiratory: May cause respiratory irritation.
Ingestion: may cause nausea, vomiting, diarrhea.
Skin: May cause skin irritation.
Eye mucous membrane: May cause eye irritation.

11.2 Acute toxicity

By mouth:
LD50 2460mg/kg Rat[ACN]

By skin:
LD50 390mg/kg Rabbit[ACN]

By Inhalation:
LC50 16000ppm 4h Rat[ACN]

By eye:
No data available

11.3 Skin corrosion/irritation

No data available

11.4 Eye corrosion/irritation

No data available

11.5 Respiratory or skin sensitization

No data available

11.6 Germ cell mutagenicity

No data available

11.7 Cancer

No data available

11.8 Reproductive toxicity

No data available

11.9 Specific target organ toxicity(single exposure)

No data available

11.10 Specific target organ toxicity(repeated exposure)

No data available

11.11 Inhalation hazard

No data available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Fish:
LC50>100mg/L 96 hr[ACN]

Crustaceans:
No data available

Birds:
No data available

12.2 Persistence and degradability

Persistence: log Kow -0.3
Degradability: 84%[ACN]

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Other harmful effect

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods

Disposal of wastes and container should be in accordance with Dangerous Wastes Management Regulation.

13.2 Disposal considerations

The wastes disposal should be in accordance with the national, regional and local laws and regulations.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1648 Class: 3 Packing group: II
Proper shipping name: Electrolyte for Double-layer Capacitor

Poison Inhalation Hazard: No

IMDG

UN number: 1648 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: Electrolyte for Double-layer Capacitor

IATA

UN number: 1648 Class: 3 Packing group: II
Proper shipping name: Electrolyte for Double-layer Capacitor

15. REGULATORY INFORMATION

Hazardous Chemicals Catalog
Dangerous chemical safety regulations
Chemical classification and hazard communication - General
Chemical classification, precautionary labeling and precautionary statements of norms
Material Safety Data Sheet preparation of regulations
Globally Harmonized System of Classification and Labelling
Recommendations on the transport of dangerous goods-Model Regulations

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. WATSON INTERNATIONAL and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.watson-int.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.