



# iNtRON BIOTECHNOLOGY

## SAFETY DATA SHEET

### NomelRT™ Western Blot Stripping Buffer

Date of issue: 2018-05-28

Revision date: 2018-05-28

Version: R0001.0001

#### 1. IDENTIFICATION

##### A. Product name

- NomelRT™ Western Blot Stripping Buffer

##### B. Recommended use and restriction on use

- General use : Laboratory chemicals  
- Restriction on use : Not available

##### C. Manufacturer / Supplier / Distributor information

###### o Manufacturer information

- Company name : iNtRON Biotechnology, Inc.  
- Address : #1011 Jungang Induspia V B/D, 137, Sagimakgol-ro, Jungwon-gu, Seongnam, Gyeonggi-do, 13202, Korea  
- Dept. : CRT center  
- Telephone number : +82-31-739-5737  
- Emergency telephone number :  
- Fax number : +82-31-739-5264  
- E-mail address : intronbio@intronbio.com

###### o Supplier/Distributor information

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#### 2. HAZARD IDENTIFICATION

##### A. GHS Classification

- Acute toxicity (dermal) : Category3

##### B. GHS label elements

###### o Hazard symbols



###### o Signal words

- Danger

###### o Hazard statements

- H311 Toxic in contact with skin

###### o Precautionary statements

**1) Prevention**

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

**2) Response**

- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P361 Remove/Take off immediately all contaminated clothing.
- P363 Wash contaminated clothing before reuse.

**3) Storage**

- P405 Store locked up.

**4) Disposal**

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

**C. Other hazards which do not result in classification : (NFPA Classification)**○ **NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 0, Reactivity : 1

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Sodium dodecyl sulfate	Sodium lauryl sulfate ; Dodecyl sodium sulfate ; Lauryl sodium sulfate ; Sodium dodecyl sulphate ; Dodecyl alcohol, hydrogen sulfate, sodium salt ; Lauryl sulfate sodium salt ; Sulfuric acid, monododecyl ester, sodium salt ;	151-21-3	0.5~1
Aminoacetic acid	2-Aminoacetic acid ; Acetic acid, amino- ; Glicoamin ; Glycocoll ; Glycosthene ;	56-40-6	0.2~0.5
Hydrogen chloride	Aqueous hydrogen chloride ; Hydrogen chloride (HCl)	7647-01-0	0.05~0.1

**4. FIRST AID MEASURES****A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

**B. Skin contact**

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Prevent the spread of the skin.
- Take the doctor's examination.

**C. Inhalation contact**

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

**D. Ingestion contact**

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

**E. Delayed and immediate effects and also chronic effects from short and long term exposure**

- Not available

**F. Notes to physician**

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

## 5. FIREFIGHTING MEASURES

### A. Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

### B. Specific hazards arising from the chemical

- Not available

### C. Special protective actions for firefighters

- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Keep containers cool with water spray.
- Fine powder may cause ignition.

## 6. ACCIDENTAL RELEASE MEASURES

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

- Ventilate closed spaces before entering.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Avoid dust formation.
- Moist with water to prevent dust scattering.

### B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

### C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Dust spills : Cover dust spills with plastic sheet or waterproof cloth to minimize spreading and avoid contact with water.
- Small liquid state spills: Appropriate container for disposal of spilled material collected.
- For disposal of spilled material in appropriate containers collected and clear surface.

## 7. HANDLING AND STORAGE

### A. Precautions for safe handling

- Wash thoroughly after handling.
- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Comply with all applicable laws and regulations for handling
- Minimize occurrence of dust and accumulation.`

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

- Save in cool, dry and well ventilated place.
- Do not apply direct heat.
- Do not apply any physical shock to container.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### A. Exposure limits

- **ACGIH TLV**
  - [Hydrogen chloride] : Ceiling, 2 ppm
- **OSHA PEL**
  - [Hydrogen chloride]:(C) 5 (C) 7

### B. Engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

### C. Individual protection measures, such as personal protective equipment

- **Respiratory protection**
  - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
  - Respiratory protection is ranked in order from minimum to maximum.
  - Consider warning properties before use.
  - Dust, mist, fume-purifying respiratory protection
  - Any air-purifying respirator with a corpuscle filter of high efficiency
  - Any respiratory protection with a electromotion fan(for dust, mist, fume-purifying)
  - Self-contained breathing apparatus with a corpuscle filter of high efficiency
  - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- **Eye protection**
  - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
  - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- **Hand protection**
  - Wear appropriate glove.
- **Skin protection**
  - Wear appropriate clothing.
- **Others**
  - Not available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Not available
- Color	Not available
B. Odor	Not available
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	Not available
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	Not available
N. Specific gravity(Relative density)	Not available
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

[Sodium dodecyl sulfate]

A. Appearance	
- Appearance	Solid, crystalline, fragment, powder
- Color	White
B. Odor	Very mild smell
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	204~207 °C
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	Not available
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	-/-
K. Vapour pressure	0.0000000000047mmHg (at 25C (estimation))
L. Solubility	-10%
M. Vapour density	Not available
N. Specific gravity(Relative density)	(>1,1(water=1))
O. Partition coefficient of n-octanol/water	1.6
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	288.38

## [Aminoacetic acid]

A. Appearance	
- Appearance	Solid(crystal)
- Color	White
B. Odor	Odorless
C. Odor threshold	Not available
D. pH	4 (0.2molar solution)
E. Melting point/Freezing point	(Degradation)
F. Initial Boiling Point/Boiling Ranges	(Degradation)
G. Flash point	Not available
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	-/-
K. Vapour pressure	0.000000128mmHg (@ 25 C, estimation)
L. Solubility	249000 mg/l (Water Solubility 25 °C)
M. Vapour density	2.59
N. Specific gravity(Relative density)	1.161 (g/cu cm@ 20 °C )
O. Partition coefficient of n-octanol/water	-3.21
P. Autoignition temperature	No ignition
Q. Decomposition temperature	262 °C
R. Viscosity	Not available
S. Molecular weight	75.07

## [Hydrogen chloride]

A. Appearance	
- Appearance	Gas
- Color	Colorless
B. Odor	Strong smell
C. Odor threshold	7mg/m <sup>3</sup>
D. pH	(Basic)
E. Melting point/Freezing point	-114 °C
F. Initial Boiling Point/Boiling Ranges	-85 °C
G. Flash point	Not available
H. Evaporation rate	Not available

I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	88mHg(-115.5 °C)
L. Solubility	67g/100ml (30 °C)
M. Vapour density	1.3 (Air=1)
N. Specific gravity(Relative density)	1.27 (Gas)
O. Partition coefficient of n-octanol/water	0.25
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	0.405
S. Molecular weight	36.5

## 10. STABILITY AND REACTIVITY

### A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

### B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

### C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

### D. Incompatible materials

- Not available

### E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

## 11. TOXICOLOGICAL INFORMATION

### A. Information on the likely routes of exposure

- (Respiratory tracts)
  - Not available
- (Oral)
  - Not available
- (Eye·Skin)
  - Not available

### B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
  - \* Oral
    - Product (ATEmix) : >5000mg/kg
    - [Sodium dodecyl sulfate] : LD50 1200 mg/kg Rat (SIDS)
    - [Aminoacetic acid] : LD50 7930 mg/kg Rat
    - [Hydrogen chloride] : LD50 238 mg/kg Rat (SIDS)
  - \* Dermal
    - Product (ATEmix) : 300mg/kg < ATEmix <= 2000mg/kg
    - [Sodium dodecyl sulfate] : LD50 600 mg/kg Rabbit (SIDS)
    - [Hydrogen chloride] : LD50 > 5010 mg/kg Rabbit (SIDS)
  - \* Inhalation
    - Product (ATEmix) : Not available
    - [Hydrogen chloride] : Gas LC50 1411 ppm 4 hr Rat (NITE)
- Skin corrosion/irritation
  - Not available
- Serious eye damage/irritation
  - Not available
- Respiratory sensitization

- Not available
- **Skin sensitization**
  - Not available
- **Carcinogenicity**
  - \* **IARC**
    - [Hydrogen chloride] : Group 3
  - \* **OSHA**
    - Not available
  - \* **ACGIH**
    - [Hydrogen chloride] : A4
  - \* **NTP**
    - Not available
  - \* **EU CLP**
    - Not available
- **Germ cell mutagenicity**
  - Not available
- **Reproductive toxicity**
  - Not available
- **STOT-single exposure**
  - Not available
- **STOT-repeated exposure**
  - Not available
- **Aspiration hazard**
  - Not available

## 12. ECOLOGICAL INFORMATION

### A. Ecotoxicity

- **Fish**
  - [Sodium dodecyl sulfate] : LC50 1.31 mg/ℓ 96 hr Cyprinus carpio (ECOTOX)
  - [Aminoacetic acid] : LC50 600000 mg/ℓ 96 hr (Estimate)
  - [Hydrogen chloride] : LC50 3.25 mg/ℓ ~ 3.5 mg/ℓ 96 hr Lepomis macrochirus
- **Crustaceans**
  - [Sodium dodecyl sulfate] : EC50 6 mg/ℓ 48 hr Daphnia magna (ECOTOX)
  - [Aminoacetic acid] : LC50 22024 mg/ℓ 48 hr (Estimate)
  - [Hydrogen chloride] : EC50 4.92 mg/ℓ 48 hr Daphnia magna
- **Algae**
  - [Sodium dodecyl sulfate] : EC50 1.2 mg/ℓ 96 hr Skeletonema costatum (ECOTOX)
  - [Aminoacetic acid] : EC50 6417 mg/ℓ 96 hr (Estimate)
  - [Hydrogen chloride] : EC50 0.492 mg/ℓ 72 hr Selenastrum capricornutum

### B. Persistence and degradability

- **Persistence**
  - [Sodium dodecyl sulfate] : log Kow 1.60
  - [Aminoacetic acid] : log Kow -3.21 (NLM)
  - [Hydrogen chloride] : log Kow 0.25 (ICSC)
- **Degradability**
  - Not available

### C. Bioaccumulative potential

- **Bioaccumulative potential**
  - [Sodium dodecyl sulfate] : BCF 2.1 ~ 7.1 (OECD SIDS)
  - [Aminoacetic acid] : BCF 3.162 (Estimate)
  - [Hydrogen chloride] : BCF 3.162 (availability to concentrate is low)
- **Biodegradation**
  - [Sodium dodecyl sulfate] : 100 (%) 28 day (AFNOR T 90.302 (1997), IUCLID)
  - [Aminoacetic acid] : 79 (%) 14 day (Biodegradation : Ready biodegradability)

**D. Mobility in soil**

- Not available

**E. Other adverse effects**

- Not available

**13. DISPOSAL CONSIDERATIONS****A. Disposal methods**

- Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

**B. Special precautions for disposal**

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

**14. TRANSPORT INFORMATION****A. UN No. (IMDG CODE/IATA DGR)**

- 3288

**B. Proper shipping name**

- TOXIC SOLID, INORGANIC, N.O.S.

**C. Hazard Class**

- 6.1

**D. IMDG CODE/IATA DGR Packing group**

- III

**E. Marine pollutant**

- Not applicable

**F. Special precautions for user related to transport or transportation measures**

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-A (Toxic substances)

**15. REGULATORY INFORMATION****A. National and/or international regulatory information**

- o **POPs Management Law**
  - Not applicable
- o **Information of EU Classification**
  - \* **Classification**
    - [Hydrogen chloride] : H331, H314
- o **U.S. Federal regulations**
  - \* **OSHA PROCESS SAFETY (29CFR1910.119)**
    - [Hydrogen chloride] : 2267.995 kg 5000 lb
  - \* **CERCLA Section 103 (40CFR302.4)**
    - [Hydrogen chloride] : 2267.995 kg 5000 lb
  - \* **EPCRA Section 302 (40CFR355.30)**
    - Not applicable
  - \* **EPCRA Section 304 (40CFR355.40)**
    - Not applicable



- \* **EPCRA Section 313 (40CFR372.65)**
  - Not applicable
- **Rotterdam Convention listed ingredients**
  - Not applicable
- **Stockholm Convention listed ingredients**
  - Not applicable
- **Montreal Protocol listed ingredients**
  - Not applicable

## 16. OTHER INFORMATION

### A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

### B. Issue date

- 2018-05-28

### C. Revision number and Last date revised

- 2018-05-28

### D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).