SAFETY DATA SHEET

DNA-maxi SV Plasmid DNA Purification Kit - M2 Buffer (Lysis Buffer)

Date of issue: 2018-05-21 **Revision date: 2018-05-21** **Version: R0003.0001**

1. IDENTIFICATION

A. Product name

- DNA-maxi SV Plasmid DNA Purification Kit - M2 Buffer (Lysis Buffer)

B. Recommended use and restriction on use

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

C. Manufacturer / Supplier / Distributor information

○ **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

○ **Supplier/Distributer 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

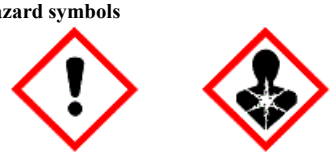
2. HAZARD IDENTIFICATION

A. GHS Classification

- Skin corrosion/irritation : Category2
- Serious eye damage/irritation : Category2A
- Specific target organ toxicity(Single exposure) : Category2

B. GHS label elements

○ **Hazard symbols**



○ **Signal words**

- Warning

○ **Hazard statements**

- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H371 May cause damage to organs (Refer Section SDS 11)

○ **Precautionary statements**

1) Prevention

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P309+P311 If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
- P321 Specific treatment
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P362 Take off contaminated clothing and wash 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 hydroxide	Caustic soda ; Sodium hydroxide ; Sodium hydrate ; Ascarite	1310-73-2	1 ~ 4%
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	0.1 ~ 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.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

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.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Wash thoroughly after handling.

C. Inhalation contact

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

- Get medical attention immediately.

D. Ingestion contact

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

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Avoid skin contact and inhalation.

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.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not handle until all safety precautions have been read and understood.

B. Conditions for safe storage, including any incompatibilities

- Do not use damaged containers.
- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Keep sealed when not in use.
- Collected them in sealed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

○ **ACGIH TLV**

- [Sodium hydroxide] : Ceiling 2 mg/m3
- [Sodium dodecyl sulfate] : Not available

○ **OSHA PEL**

- [Sodium hydroxide]: 2mg/m3
- [Sodium dodecyl sulfate] : Not available

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.

○ **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 hydroxide]

A. Appearance	
- Appearance	Solid
- Color	White
B. Odor	Not available
C. Odor threshold	Not available
D. pH	(0.05% pH 12; 0.5% pH 13; 5% pH 14)
E. Melting point/Freezing point	318 ℃
F. Initial Boiling Point/Boiling Ranges	1390 ℃
G. Flash point	Not available
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not flammable
J. Upper/Lower Flammability or explosive limits	- / -
K. Vapour pressure	Not available
L. Solubility	109 g/100 ml (20℃ Alcohol, Available in glycerol)
M. Vapour density	Not available
N. Specific gravity(Relative density)	2.1
O. Partition coefficient of n-octanol/water	-3.88 (Estimated)
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
S. Molecular weight	40

[Sodium dodecyl sulfate]

A. Appearance	
- Appearance	Solid(Powder)
- Color	White
B. Odor	Very weak smell
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	204 ~ 207 ℃
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	0.00000000000047 mmHg (at 25℃)
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

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)**

- Causes serious eye irritation
- Causes skin irritation

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

○ **Acute toxicity**

*** Oral**

- Not available

*** Dermal**

- Product (ATEmix) : Not available
- [Sodium hydroxide] : LD50 1350 ㎎/㎏ Rabbit (HSDB)

*** Inhalation**

- Not available

○ **Skin corrosion/irritation**

- Causes skin irritation

○ **Serious eye damage/irritation**

- Causes serious eye irritation

○ **Respiratory sensitization**

- Not available

○ **Skin sensitization**

- Not available

○ **Carcinogenicity**

*** IARC**

- Not available

*** OSHA**

- Not available

*** ACGIH**

- Not available

*** NTP**

- Not available

*** EU CLP**

- Not available

○ **Germ cell mutagenicity**

- Not available

○ **Reproductive toxicity**

- Not available

○ **STOT-single exposure**

- May cause damage to organs

○ **STOT-repeated exposure**

- Not available

○ **Aspiration hazard**

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ **Fish**

- [Sodium hydroxide] : LC50 45.4 ㎎/ℓ 96 hr
- [Sodium dodecyl sulfate] : LC50 1.31 ㎎/ℓ 96 hr Cyprinus carpio (ECOTOX)

○ **Crustaceans**

- [Sodium hydroxide] : LC50 40.4 ㎎/ℓ 48 hr (SIDS)
- [Sodium dodecyl sulfate] : EC50 6 ㎎/ℓ 48 hr Daphnia magna (ECOTOX)

○ **Algae**

- Not available
- [Sodium dodecyl sulfate] : EC50 1.2 ㎎/ℓ 96 hr Skeletonema costatum (ECOTOX)

B. Persistence and degradability

○ **Persistence**

- [Sodium hydroxide] : log Kow -3.88 (SRC)
- [Sodium dodecyl sulfate] : log Kow 1.60

○ **Degradability**

- Not available

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- [Sodium hydroxide] : BCF -3.88 (SRC)
- [Sodium dodecyl sulfate] : BCF 2.1 ~ 7.1 (OECD SIDS)

○ **Biodegration**

- Not available
- [Sodium dodecyl sulfate] : 100 (%) 28 day (AFNOR T 90.302 (1997), IUCLID)

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)

- [SODIUM HYDROXIDE, SOLID] 1823
- [Sodium dodecyl sulfate] Not applicable

B. Proper shipping name

- Not applicable

C. Hazard Class

- Not applicable

D. IMDG CODE/IATA DGR Packing group

- Not applicable

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-B (Corrosive substances)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ **POPs Management Law**

- Not applicable

○ **Information of EU Classification**

*** Classification**

- [Sodium hydroxide] : H314

○ **U.S. Federal regulations**

*** OSHA PROCESS SAFETY (29CFR1910.119)**

- Not applicable

*** CERCLA Section 103 (40CFR302.4)**

- [Sodium hydroxide] : 453.599 kg 1000 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

- 2018-05-21

C. Revision number and Last date revised

- 2018-05-21

D. Other

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