

SAFETY DATA SHEET

LiliF™ Newcastle Disease virus Ag rapid test kit

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Version: R0001.0001

1. IDENTIFICATION

A. Product name

- LiliF™ Newcastle Disease virus Ag rapid test kit [IR0341456]

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. : RDT center
 - Telephone number : +82-31-739-5737
 - Emergency telephone number :
 - Fax number : +82-31-739-5264
 - E-mail address : intronbio@intronbio.com

○ Supplier/Distributor information

- Company name : iNtRON Biotechnology, Inc.
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2. HAZARD IDENTIFICATION

A. GHS Classification

- Acute toxicity (oral) : Category5
 - Skin corrosion/irritation : Category3
 - Germ cell mutagenicity : Category1B

B. GHS label elements

○ Hazard symbols



○ Signal words

- Danger

○ Hazard statements

- H303 May harmful if swallowed.
- H316 Cause mild skin irritation.
- H340 May cause genetic defects

o **Precautionary statements**

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P308+P313 If exposed or concerned: Get medical advice/attention.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.

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)

o **NFPA grade (0 ~ 4 level)**

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Potassium chloride	Dipotassium dichloride ; Potassium monochloride ;	7447-40-7	<1
Disodium hydrogenorthophosphate	Phosphoric acid, sodium salt (1:2) ; Phosphoric acid, disodium salt ; Sodium monophosphate ; Sodium hydrogen phosphite ; Sodium hydrogenorthophosphate ; Sodium phosphate, dibasic ; Sodium monohydrogen phosphate ; Disodium phosphite ; Disodium hydrogen phosphate ; Soda phosphate ;	7558-79-4	<1
Sodium chloride	Common salt ; Halite ;	7647-14-5	<1
Phosphoric acid monopotassium salt	Phosphoric acid, potassium salt (1:1) ; Phosphoric acid, monopotassium salt ; Potassium phosphate monobasic ; Potassium hydrogen phosphate (KH ₂ PO ₄) ; Monopotassium phosphate ; Potassium dihydrogen phosphate (KH ₂ PO ₄) ; Dihydrogen potassium phosphate ; Monobasic potassium phosphate ; Monopotassium dihydrogen monophosphate ; Monopotassium dihydrogen orthophosphate ; Monopotassium dihydrogen phosphate ; Monopotassium orthophosphate ; Potassium acid phosphate ; Potassium biphosphate ; Potassium diphosphate ; Potassium monobasic phosphate (KH ₂ PO ₄) ; Potassium phosphate (K(H ₂ PO ₄)) ;	7778-77-0	<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.
- Get medical attention immediately.

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.
- Remove contaminated clothing, shoes and isolate.
- Wear gloves when washing the patient, and please avoid contact with contaminated clothing.

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.
- If exposed or concerned, get medical attention/advice.

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

- Move containers from fire area, if you can do without the risk.
- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Do not access if the tank on fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Fine powder may cause ignition.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Move container to safe area from the leak area.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Avoid dust formation.
- Moist with water to prevent dust scattering.
- Cleanup and disposal under expert supervision is advised.

- Keep unauthorized people away, isolate hazard area and deny entry.

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.
- Spilled material should be treated as a potential risk of waste collected.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Minimize occurrence of dust and accumulation.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Keep sealed when not in use.
- No open fire.
- Prevent static electricity and keep away from combustible materials or heat sources.
- Collected them in sealed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- o **ACGIH TLV**
 - Not available
- o **OSHA PEL**
 - 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

- o **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

[Disodium hydrogenorthophosphate]

A. Appearance	
- Appearance	Absorbent powder
- Color	Colorless or white
B. Odor	Odorless
C. Odor threshold	Not available
D. pH	9.1
E. Melting point/Freezing point	250 °C
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	Not available
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Non-flammability
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	7.7g / 100ml (20 °C)
M. Vapour density	Not available
N. Specific gravity(Relative density)	0.5 (0.5 ~ 1.2)
O. Partition coefficient of n-octanol/water	-5.8
P. Autoignition temperature	Non-flammability
Q. Decomposition temperature	250 °C
R. Viscosity	Not available
S. Molecular weight	141.98

[Potassium chloride]

A. Appearance	
- Appearance	Solid
- Color	Colorless
B. Odor	Odorless
C. Odor threshold	Not available
D. pH	7
E. Melting point/Freezing point	770 - 773 °C
F. Initial Boiling Point/Boiling Ranges	1407 °C
G. Flash point	Not available
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	19 / 2.7 %
K. Vapour pressure	5.73 hPa at 906 °C
L. Solubility	342000 mg/l (20 °C)
M. Vapour density	Not available
N. Specific gravity(Relative density)	1.98
O. Partition coefficient of n-octanol/water	-0.46
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	74.55

[Sodium Chloride]

A. Appearance	
- Appearance	Solid
- Color	Colorless, White
B. Odor	Odorless
C. Odor threshold	Not available
D. pH	6.7 (6.7 - 7.3)
E. Melting point/Freezing point	801 °C
F. Initial Boiling Point/Boiling Ranges	1413 °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	9.01575mmHg (at 1026.85 °C)
L. Solubility	360000 mg/l
M. Vapour density	Not available
N. Specific gravity(Relative density)	2.16
O. Partition coefficient of n-octanol/water	-0.46
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	58.44

[Phosphoric acid monopotassium salt]

A. Appearance	
- Appearance	Solid
- Color	Colorless
B. Odor	Odorless
C. Odor threshold	Not available
D. pH	4.1 (4.1-4.5 conc : 5% 25 °C)
E. Melting point/Freezing point	253 °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	Not available
K. Vapour pressure	Not available
L. Solubility	22 g/100ml
M. Vapour density	Not available
N. Specific gravity(Relative density)	2.34
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	136.09

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)**
 - May harmful if swallowed.
- **(Eye/Skin)**
 - Cause mild skin irritation.

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

- **Acute toxicity**
 - * **Oral**
 - Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg
 - [Potassium chloride] : LD50 2600 mg/kg Rat (HSDB)
 - [Disodium hydrogenorthophosphate] : LD50 > 2000 mg/kg Rat (IUCLID)
 - [Sodium chloride] : LD50 = 3000 mg/kg Rat (IUCLID)
 - [Phosphoric acid monopotassium salt] : LD50 1700 mg/kg mouse (ca.)(IUCLID)
 - * **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [Sodium chloride] : LD50 > 10000 mg/kg Rabbit (Thomson Micromedex)
 - [Phosphoric acid monopotassium salt] : LD50 > 4640 mg/kg Rabbit (NLM)
 - * **Inhalation**
 - Product (ATEmix) : Not available
 - [Sodium chloride] : LC50 > 10.5 mg/ℓ 4 hr Rat (Thomson Micromedex)
- **Skin corrosion/irritation**

- Cause mild skin irritation.
- **Serious eye damage/irritation**
 - Not available
- **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**
 - May cause genetic defects
- **Reproductive toxicity**
 - Not available
- **STOT-single exposure**
 - Not available
- **STOT-repeated exposure**
 - Not available
- **Aspiration hazard**
 - Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- **Fish**
 - [Potassium chloride] : LC50 880 mg/l 96 hr Pimephales promelas (OECD SIDS)
 - [Disodium hydrogenorthophosphate] : LC50 2260000000 mg/l 96 hr (Estimate)
 - [Sodium chloride] : LC50 1294.6 mg/l 96 hr Lepomis macrochirus (ECOTOX)
 - [Phosphoric acid monopotassium salt] : LC50 40400000 mg/l 96 hr (Estimate)
- **Crustaceans**
 - [Potassium chloride] : EC50 177 mg/l 48 hr Daphnia magna (OECD SIDS)
 - [Disodium hydrogenorthophosphate] : LC50 3580 mg/l 48 hr Daphnia magna (ECOTOX)
 - [Sodium chloride] : EC50 402.6 mg/l 48 hr Daphnia magna (ECOTOX)
 - [Phosphoric acid monopotassium salt] : LC50 2.4 mg/l 28 hr (Estimate)
- **Algae**
 - [Potassium chloride] : EC50 2500 mg/l 72 hr (IUCLID)
 - [Disodium hydrogenorthophosphate] : EC50 564000000 mg/l 96 hr (Estimate)
 - [Phosphoric acid monopotassium salt] : EC50 12700000 mg/l 96 hr (Estimate)

B. Persistence and degradability

- **Persistence**
 - [Potassium chloride] : log Kow -0.46 (OECD SIDS)
 - [Disodium hydrogenorthophosphate] : log Kow -5.8 (Estimate)
 - [Sodium chloride] : log Kow -0.46 (Estimate)
 - [Phosphoric acid monopotassium salt] : log Kow -3.96 (Estimate)
- **Degradability**
 - Not available

C. Bioaccumulative potential

- **Bioaccumulative potential**

- [Potassium chloride] : BCF 0.47 (IUCRID)
- [Disodium hydrogenorthophosphate] : BCF 3.162 (Estimate)
- [Sodium chloride] : BCF 3.162 (Estimate)
- o **Biodegration**
 - Not available

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)

- 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 : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

15. REGULATORY INFORMATION

A. National and/or international regulatory information

- o **POPs Management Law**
 - Not applicable
- o **Information of EU Classification**
 - * **Classification**
 - Not applicable
- o **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**

- Not applicable
- * **CERCLA Section 103 (40CFR302.4)**
 - [Disodium hydrogenorthophosphate] : 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

- 2018-06-01

C. Revision number and Last date revised

- Not applicable

D. Other

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