



SAFETY DATA SHEET

NO(Nitric Oxide)Detection Kit-Nitrite(FW69.0)Standard(2mM)

Date of issue: 2018-12-28

Revision date: Not applicable

Version: R0001.0001

1. IDENTIFICATION

A. Product name

- NO(Nitric Oxide)Detection Kit-Nitrite(FW69.0)Standard(2mM)

B. Recommended use and restriction on use

- General use : Not available
 - 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

- Oxidizing solids : Category3
 - Acute toxicity (oral) : Category3
 - Specific target organ toxicity(Single exposure) : Category2
 - Specific target organ toxicity(Repeated exposure) : Category2
 - Acute aquatic toxicity : Category1
 - Chronic aquatic toxicity : Category1

B. GHS label elements

o Hazard symbols



- **Signal words**
 - Danger
- **Hazard statements**
 - H272 May intensify fire; oxidizer
 - H301 Toxic if swallowed
 - H371 May cause damage to organs (Refer Section SDS 11)
 - H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
 - H400 Very toxic to aquatic life
 - H410 Very toxic to aquatic life with long lasting effects
- **Precautionary statements**
 - 1) Prevention**
 - P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
 - P220 Keep/Store away from clothing//combustible materials.
 - P221 Take any precaution to avoid mixing with combustibles, incompatibles material
 - P260 Do not breathe dust/fume.
 - P264 Wash hands thoroughly after handling.
 - P270 Do not eat, drink or smoke when using this product.
 - P273 Avoid release to the environment.
 - P280 Wear protective gloves/protective clothing/eye protection/face protection.
 - 2) Response**
 - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 - P309+P311 If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
 - P314 Get medical advice/attention if you feel unwell.
 - P321 Specific treatment
 - P330 Rinse mouth.
 - P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
 - P391 Collect spillage.
 - 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 : 0, Flammability : 0, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | Trade names and Synonyms | CAS No. | Content(%) |
|----------------|--------------------------|-----------|------------|
| Sodium nitrite | - | 7632-00-0 | 0.005 |

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.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

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.
- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- 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

- Cool containers with water until well after fire is out.
- Avoid inhalation of materials or combustion by-products.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Fine powder may cause ignition.
- Move people from the area.

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

- Ventilate closed spaces before entering.
- 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.
- Remove all sources of ignition.
- Avoid dust formation.
- Moist with water to prevent dust scattering.
- Cleanup and disposal under expert supervision is advised.

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.
- Put the spilled material in an appropriate containers and clean the contaminated area
- Avoid entering to sewers or water system.
- Prevent the influx to waterways, sewers, basements or confined spaces.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling
- Get the manual before use.
- Dealing only with a well-ventilated place.
- Minimize occurrence of dust and accumulation.

B. Conditions for safe storage, including any incompatibilities

- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- Prevent static electricity and keep away from combustible materials or heat sources.
- Collected them in sealed containers.
- Do not eat, drink or smoke when using this product.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

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

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

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
 - Air-purifying respirator with high-efficiency particulate filtering
 - 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.
- o **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.
- o **Hand protection**
 - Wear appropriate chemical resistant glove.
- o **Skin protection**
 - Wear appropriate chemical resistant protective clothing.
- o **Others**
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---------------|-----------------------|
| A. Appearance | |
| - Appearance | Various type of solid |
| - Color | White and Yellow |
| B. Odor | No odor |

| | |
|---|---------------|
| C. Odor threshold | Not available |
| D. pH | Not available |
| E. Melting point/Freezing point | 280°C |
| F. Initial Boiling Point/Boiling Ranges | Below 320 °C |
| 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 | Not available |
| L. Solubility | 82g/100ml |
| M. Vapour density | 2.4 |
| N. Specific gravity(Relative density) | 2.2 |
| O. Partition coefficient of n-octanol/water | -3.7 |
| P. Autoignition temperature | Not available |
| Q. Decomposition temperature | Not available |
| R. Viscosity | Not available |
| S. Molecular weight | 69 |

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
- Avoid contact with heat, sparks, flame or other ignition sources.
- Keep away from heat source.

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)
 - Toxic if swallowed
- (Eye/Skin)
 - Not available

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

- Acute toxicity
 - * Oral
 - [Sodium nitrite] : LD50 = 180 mg/kg Rat (IUCRID)
 - * Dermal
 - Not available
 - * Inhalation
 - [Sodium nitrite] : Dust LC50 85 mg/ℓ 2 hr Mouse (4 hr Converted value 42.5 mg/ℓ) (HSDB)
- Skin corrosion/irritation
 - Not available

- **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**
 - Not available
- **Reproductive toxicity**
 - Not available
- **STOT-single exposure**
 - May cause damage to organs
- **STOT-repeated exposure**
 - May cause damage to organs through prolonged or repeated exposure
- **Aspiration hazard**
 - Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- **Fish**
 - [Sodium nitrite] : LC50 = 0.36 mg/ℓ 96 hr (NITE)
- **Crustaceans**
 - [Sodium nitrite] : EC50 = 18.11 mg/ℓ 48 hr
- **Algae**
 - [Sodium nitrite] : EC50 = 159 mg/ℓ 72 hr

B. Persistence and degradability

- **Persistence**
 - [Sodium nitrite] : log Kow -3.7
- **Degradability**
 - Not available

C. Bioaccumulative potential

- **Bioaccumulative potential**
 - Not available
- **Biodegradation**
 - 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 designated waste is mixed, it is difficult to treat separately, 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 dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 3077

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- 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-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

- **POPs Management Law**
 - Not applicable
- **Information of EU Classification**
 - * **Classification**
 - [Sodium nitrite] : H272, H301, H400
- **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - [Sodium nitrite] : 45.3599 kg 100 lb
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - [Sodium nitrite] : 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

- 2018-12-28

C. Revision number and Last date revised

- Not applicable

D. Other

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