1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NHS beads (FG beads)
Product uses : For in vitro research use
Physical state : Suspension
Company : Tamagawa Seiki Co., Ltd.
Telephone : +81 265-21-0501
Fax : +81 265-21-1896

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Substances
CAS No. Description:
67-63-0 2-Propanol

Chemical characterization: Mixtures
Description: Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Components</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>2-Propanol</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Hazard pictograms

Signal ward Danger

Hazard statements
Highly flammable liquid and vapor
Causes serious eye irritation
May cause respiratory irritation
Suspected of damaging fertility or the unborn child
Causes damage to the following organs: central nervous system, systemic toxicity
Causes damage to the following organs through prolonged or repeated exposure: blood system
May cause damage to the following organs through prolonged or repeated exposure:
respiratory system, liver, spleen

Precautionary statements
In case of inadequate ventilation wear respiratory protection.
Avoid breathing dust/fume/gas/mist/vapors/spray.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards
Not applicable.
4. FIRST AID MEASURES
After inhalation:
Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Get medical advice/attention.
After skin contact:
Gently wash the skin immediately. Get medical advice/attention. Remove/Take off all contaminated clothing. Wash the clothing before re-use.
After eye contact:
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinse since then. If symptoms persist, get medical advice/attention.
After swallowing:
Get medical advice/attention.
Rinse mouth with water.
Most important symptoms and effects, both acute and delayed:
At high concentrations of exposure, cause irritation eyes, nose, throat.
Causes drowsiness, headache, incoordination.
Long-term exposure to the skin, it is degreasing, causes drying, cracking, dermatitis.
Protection of first-aiders:
Watch out the fire. Wear a gas mask for an organic solvent, if any.

5. FIRE-FIGHTING MEASURES
Extinguishing media:
Small Fires: CO2, dry chemical, water spray or alcohol-resistant foam.
Large Fires: Water spray, alcohol-resistant foam.
Unsuitable extinguishing media: Straight streams
Special hazards arising:
Very burnable, easily ignite with heat, sparks and flames.
The container may explode if heated.
Fire may cause irritating, toxic, or corrosive gases.
High flammable liquid and vapor.
Specific extinguishing method:
If there is a possibility that the fire may spread by water spray, fire extinguishing media shown above should use appropriate fire extinguishing media other than water spray.
Extremely low flash point: In large fire where there is no fire extinguishing effect other than water spray, water is sprayed.
Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.
Even after extinguishing fire, use a large amount of water to cool the container sufficiently.
Specific protective equipment for firefighters:
When extinguishing fire, be sure to appropriate breathing apparatus and proactive equipment.

6. ACCIDENTAL RELEASE MEASURES
Personal precautions, protective equipment and emergency procedures:
Do not touch or walk through spilled material.
Isolate the appropriate distance as leakage area immediately in all directions.
Evacuate non-essential personal.
For avoid eye, skin contact and the inhalation of gas, wear proper protective equipment according to [8. Exposure controls/personal protection].
Wear the high sealing performance and impermeable protective clothing, if the fire does not occur by leakage.
Do not touch damaged container and spillage if you do not wear proper clothes.
Stay upwind.
Keep out of low areas.
Ventilate closed spaces before entering.

Environmental precautions:
Attention should be given not to cause damage to the environment by flowing of spillage to rivers.
Do not release into the environment.

Methods and material for containment and cleaning up:
Recovery, neutralization: For small spill, absorb spill with absorbent and move to a chemical waste container.
For small spill, use clean non-sparking tools to collect absorbed material.
For large spill, prevent leakage by surrounded with earth and lead the spill to a safety place to collect.
For large spill, water spray is reduce the vapor concentration. But, it may not be suppressed incineration in an enclosed space.
Stop leak if you can do it without risk.
All equipment used when handling the product must be grounded.
Use vapor suppression foam to reduce the vapor concentration.
Preventive measures for secondary accident: Remove all sources of ignition. (Prohibition of smoking, spark and flame in the near field.)
Prevent entry into waterways, sewers, basements or confined areas.

7. HANDLING AND STORAGE

Handling
Technical measures:
Wear proper equipment and take measures according to [8. Exposure controls/personal protection].
Advice on safe handling:
Do not handle until you read and understand all of the safety precautions.
Prohibit the use of a high temperature thing, spark and fire of around.
Do not overturn, drop, shock or drag containers.
Do not breathe mist, vapor and spray.
Wash your hands well after handling.
Do not put into eyes.
Do not contact, suction, or not swallowed.
Use only outdoors or in a good area of ventilation.

Incompatibilities: See [10. Stability and reactivity].
Wear proper equipment and take measures according to [8. Exposure controls/personal protection].

Hygiene measurements:
When using this product, do not eat, drink or smoke.
Wash your hands well after handling.

Storage
Safe storage condition:
Take precautionary measures against static discharges.
Take measures to prevent electrostatic charging.
Keep away from sources of ignition and heat.
Tightly closed in a well-ventilated place.
Keep away from heat/sparks/open flame/hot surfaces. -No smoking.
Store in a cool, dark and well-ventilated place.
Store away from incompatible materials such as oxidizing agents.
Avoid containers from direct sunlight and fire.
Keep containers tightly closed and store in a well-ventilated place.
Store locked up.

**Safe packaging material:** No information

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters:** 200 ppm

**Exposure limits:**
JSOH (2013): Maximum exposure limits 400 ppm, 980mg/m³
ACGIH (2013): TLV-TWA 200ppm, TLV-STEL 400 ppm

**Engineering controls**
In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

**Personal protective equipment**

- **Respiratory protection:** Wear suitable respiratory protective equipment.
- **Hand protection:** Wear suitable protective gloves.
- **Eye protection:** Wear suitable eyeglasses or chemical safety goggles.
- **Skin and body protection:** Wear protective equipment for the proper facial.

**Hygiene measure:** When using this product, do not eat, drink or smoke. Wash your hands well after handling.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**

<table>
<thead>
<tr>
<th>Form</th>
<th>Liquid (Suspension)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Brown</td>
</tr>
</tbody>
</table>

**Safety data**

- pH: no data available
- Melting point: no data available
- Boiling point: no data available
- Flash point: no data available
- Ignition temperature: no data available
- Lower explosion limit: no data available
- Upper explosion limit: no data available
- Water solubility: insoluble

### 10. STABILITY AND REACTIVITY

**Reactivity:** Stable under normal conditions.

**Chemical stability:** Stable under normal conditions.

**Possibility of hazardous reactions:**
Reacts with Strong oxidizing agent, pose a risk of fire and explosion.
Corrode aluminum at high temperatures.

**Conditions to avoid:** high temperatures

**Incompatible materials:** Strong oxidizing agents, Strong alkali agents

**Hazardous decomposition products:**
A toxic gas such as carbon monoxide and carbon dioxide occur by combustion at the time of
fire.

11. TOXICOLOGICAL INFORMATION
   Acute toxicity
   Oral toxicity:
   Dermal toxicity:
   Inhalation: Gas: Based on the NITE GHS classification results
   Inhalation: vapor:
   Inhalation: Dust and mist: No information available
   Skin corrosion/irritation
   Serious eye damage/irritation
   Respiratory sensitization: No information available
   Skin sensitization: No information available
   Germ cell mutagenicity: No information available
   Carcinogenicity: Not classified
   Reproductive toxicity
   STOT-single exposure
   STOT-repeated exposure
   Aspiration hazard: No information available

12. ECOLOGICAL INFORMATION
   Ecotoxicity
   Aquatic toxicity(Acute):
   Aquatic toxicity(Chronic):
   Hazard to the ozone layer Mobility
   The substance is not listed in Annex Montreal Protocol.

13. DISPOSAL CONSIDERATIONS
    Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION
    International transport regulations
    UN number: 1219
    Proper shipping name: ISOPROPANOL (ISOPROPYLALCOHOL)
    UN classification: 3
    Marine pollutant: Not applicable
    Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
    Applicable
    Special precaution
    Load containers containing dangerous substances and dangerous substances so that they fall
    and do not fall or break.
    Transport the containers containing dangerous substances or dangerous substances so that they
    do not cause significant friction or shaking.
    In the event of a disaster such as a significant leak of hazardous materials during transportation
    of hazardous materials, take emergency measures to prevent disasters, and to arrange for
    nearby fire departments and other relevant agencies.
    Do not transport with food and feed.
    Emergency Response Guide number 129
15. REGULATORY INFORMATION
In accordance with local and national regulations
- **Japanese regulations**
- **Industrial Safety and Health Act**
- Working Environment Evaluation Standards
- Second-class organic solvents, etc.
- Dangerous Substances - Flammable Substance
- Dangerous or Harmful Substances Subject to Be Indicated their Names, etc.
- Dangerous or Harmful Substances Subject to Be Notified their Names, etc.
- **Fire Service Act** Class-4 Alcohols
- **Air Pollution Control Act**
- **Marine Pollution Control Act** Noxious liquid substance
- **Civil Aeronautics Act** Flammable Liquids
- **Ship Safety Act** Flammable Liquids
- **Port Regulation Act** Other Dangerous Substances/Flammable Liquids
- **Road Act** Restriction of vehicle traffic

16. OTHER INFORMATION
Further information
Copyright 2009 Tamagawa Seiki Co. License granted to make unlimited paper copies for internal use only.
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. Takamagawa Seiki Co., shall not be held liable for any damage resulting from handling or from contact with the above product.