## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>NITROCELLULOSE MEMBRANE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product part number</td>
<td>R7009/R7019</td>
</tr>
<tr>
<td>Kit name</td>
<td>THRESHOLD STICK KIT</td>
</tr>
<tr>
<td></td>
<td>ILA DETECTION KIT</td>
</tr>
<tr>
<td>Kit part number</td>
<td>R8003/R8006</td>
</tr>
<tr>
<td>EC number</td>
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</tr>
<tr>
<td>CAS number</td>
<td>9004-70-0</td>
</tr>
<tr>
<td>Product description</td>
<td>Not available.</td>
</tr>
<tr>
<td>Product type</td>
<td>Solid.</td>
</tr>
<tr>
<td>Other means of identification/ Synonym</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

| Chemical formula | HNO3.xUnspecified |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Product use:** For R&D use only.

### 1.3 Details of the supplier of the safety data sheet

**MOLECULAR DEVICES**
1311 Orleans Drive
Sunnyvale, CA 94089
USA

**e-mail address of person responsible for this SDS:** msdsinquiry@moldev.com

### 1.4 Emergency telephone number

**National advisory body/Poison Centre**

- **Telephone number:** CHEMTREC (24 hours): 1-800-424-9300 (USA/Canada), +1 703-527-3887 (Outside USA/Canada)

**Supplier**

- **Telephone number:** 1-408-747-3727 (8:30A PT- 5:00P PT)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition:** Mono-constituent substance

**Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**
Flam. Sol. 1, H228

**Classification according to Directive 67/548/EEC [DSD]**
F; R11

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

---

**Date of issue/Date of revision:** 22/12/2010.
SECTION 2: Hazards identification

Hazard pictograms

- Danger: Flammable solid.

Precautionary statements

Prevention: Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Supplemental label elements: Not applicable.

Special packaging requirements:

Containers to be fitted with child-resistant fastenings: Not applicable.

Tactile warning of danger: Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII: Not applicable.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII: Not applicable.

Other hazards which do not result in classification: Not available.

SECTION 3: Composition/information on ingredients

Type: Mono-constituent substance

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulose nitrate Plastic scrap</td>
<td>CAS: 9004-70-0</td>
<td>100</td>
<td>F; R11</td>
<td>Flam. Sol. 1, H228</td>
<td>[A]</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type:
[A] Constituent
[B] Impurity
[C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

Date of issue/Date of revision: 22/12/2010.
SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact: No known significant effects or critical hazards.

Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact: No known significant effects or critical hazards.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: No specific data.

Inhalation: No specific data.

Skin contact: No specific data.

Ingestion: No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media: Do not use water jet.

Date of issue/Date of revision: 22/12/2010.
SECTION 5: Firefighting measures

5.2 Special hazards arising from the substance or mixture

| Hazards from the substance or mixture | : Flammable solid. |
| Hazardous combustion products | : Decomposition products may include the following materials: nitrogen oxides |

5.3 Advice for firefighters

| Special precautions for fire-fighters | : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. |
| Special protective equipment for fire-fighters | : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

| For non-emergency personnel | : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| For emergency responders | : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |

6.2 Environmental precautions

| : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |

6.3 Methods and materials for containment and cleaning up

| Small spill | : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. |
| Large spill | : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal. |

6.4 Reference to other sections

| : See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information. |

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling
NITROCELLULOSE MEMBRANE

SECTION 7: Handling and storage

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations: Not available.

Industrial sector specific solutions: Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits: No exposure limit value known.

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Derived effect levels: No DELs available.

Predicted effect concentrations: No PECs available.

8.2 Exposure controls

Appropriate engineering controls: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Date of issue/Date of revision: 22/12/2010.
SECTION 8: Exposure controls/personal protection

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection
- **Hand protection**: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- **Body protection**: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- **Other skin protection**: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- **Respiratory protection**: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**

- **Physical state**: Solid.
- **Colour**: Not available.
- **Odour**: Not available.
- **Odour threshold**: Not available.
- **pH**: Not available.
- **Melting point/freezing point**: Not available.
- **Initial boiling point and boiling range**: 34°C
- **Flash point**: Closed cup: 12.85°C
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Flammable in the presence of the following materials or conditions: heat.
- **Burning time**: Not available.
- **Burning rate**: Not available.
- **Upper/lower flammability or explosive limits**: Not available.
- **Vapour pressure**: Not available.
- **Vapour density**: Not available.
- **Relative density**: Not available.
- **Solubility(ies)**: Insoluble in the following materials: cold water and hot water.
- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: 170°C
- **Decomposition temperature**: Not available.
- **Viscosity**: Not available.

Date of issue/Date of revision: 22/12/2010.
SECTION 9: Physical and chemical properties

Explosive properties: Not available.
Oxidising properties: Not available.

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity
No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability
The product is stable.

10.3 Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
Avoid all possible sources of ignition (spark or flame).

10.5 Incompatible materials
Reactive or incompatible with the following materials: oxidizing materials.

10.6 Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulose nitrate Plastic scrap</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5 g/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not available.

Irritation/Corrosion: Not available.

Sensitiser: Not available.

Mutagenicity: Not available.

Carcinogenicity: Not available.

Reproductive toxicity: Not available.

Teratogenicity: Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Date of issue/Date of revision: 22/12/2010.
SECTION 11: Toxicological information

Potential on the likely routes of exposure:

Potential acute health effects:
- Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Ingestion: No known significant effects or critical hazards.
- Skin contact: No known significant effects or critical hazards.
- Eye contact: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics:
- Inhalation: No specific data.
- Ingestion: No specific data.
- Skin contact: No specific data.
- Eye contact: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure:
- Short term exposure:
  - Potential immediate effects: Not available.
  - Potential delayed effects: Not available.
- Long term exposure:
  - Potential immediate effects: Not available.
  - Potential delayed effects: Not available.

Potential chronic health effects:
- Not available.

Conclusion/Summary:
- Not available.

Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.
Other information: Not available.

SECTION 12: Ecological information

12.1 Toxicty
- Conclusion/Summary: Not available.

12.2 Persistence and degradability
- Conclusion/Summary: Not available.

12.3 Bioaccumulative potential
- Not available.

12.4 Mobility in soil
- Soil/water partition coefficient (Koc): Not available.
- Mobility: Not available.

12.5 Results of PBT and vPvB assessment

Date of issue/Date of revision: 22/12/2010.
SECTION 12: Ecological information

12.6 Other adverse effects: No known significant effects or critical hazards.

PBT: Not applicable.
P: Not available. B: Not available. T: Not available.

vPvB: Not applicable.
vP: Not available. vB: Not available.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product
Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Hazardous waste
Packaging
Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

<table>
<thead>
<tr>
<th>14.1 UN number</th>
<th>ADR/RID</th>
<th>ADN/ADNR</th>
<th>IMDG</th>
<th>IATA</th>
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<tbody>
<tr>
<td>UN3270</td>
<td>UN3270</td>
<td>UN3270</td>
<td>UN3270</td>
<td>UN3270</td>
</tr>
<tr>
<td>14.2 UN proper shipping name</td>
<td>NITROCELLULOSE MEMBRANE FILTERS</td>
<td>NITROCELLULOSE MEMBRANE FILTERS</td>
<td>NITROCELLULOSE MEMBRANE FILTERS</td>
<td>Nitrocellulose membrane filters</td>
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<tr>
<td>14.3 Transport hazard class(es)</td>
<td>4.1</td>
<td>4.1</td>
<td>4.1</td>
<td>4.1</td>
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<tr>
<td>14.4 Packing group</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
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<tr>
<td>14.5 Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
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</table>

Date of issue/Date of revision: 22/12/2010.
NITROCELLULOSE MEMBRANE

SECTION 14: Transport information

<table>
<thead>
<tr>
<th>Additional information</th>
<th>Limited quantity</th>
<th>Emergency schedules (EmS)</th>
<th>Passenger and Cargo Aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LQ8</td>
<td>F-A, S-I</td>
<td></td>
</tr>
<tr>
<td>Special provisions</td>
<td>237 286</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunnel code</td>
<td>(E)</td>
<td></td>
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</tr>
</tbody>
</table>

Special provisions 237 286 Tunnel code (E)

Limited quantities:
- LQ8
- Tunnel code (E)

Emergency schedules (EmS) F-A, S-I

Passenger and Cargo Aircraft
Quantity limitation: 1 kg
Packaging instructions: 401

Cargo Aircraft Only
Quantity limitation: 15 kg
Packaging instructions: 401

Limited Quantities - Passenger Aircraft
Quantity limitation: 1 kg
Packaging instructions: Y401

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Substances of very high concern
None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Other EU regulations

Europe inventory: This material is listed or exempted.
Black List Chemicals: Not listed
Priority List Chemicals: Not listed

Integrated pollution prevention and control list (IPPC) - Air
Integrated pollution prevention and control list (IPPC) - Water

International regulations

Chemical Weapons Convention List Schedule I Chemicals: Not listed
Chemical Weapons Convention List Schedule II Chemicals: Not listed
Chemical Weapons Convention List Schedule III Chemicals: Not listed

Date of issue/Date of revision: 22/12/2010.
NITROCELLULOSE MEMBRANE

SECTION 15: Regulatory information

15.2 Chemical Safety Assessment

Not available.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms

ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUEH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Sol. 1, H228</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

Full text of abbreviations H statements

H228 Flammable solid.

Full text of classifications [CLP/GHS]

Flam. Sol. 1, H228 FLAMMABLE SOLIDS - Category 1

Full text of abbreviated R phrases

R11- Highly flammable.

Full text of classifications [DSD/DPD]

F - Highly flammable

Date of printing

22/12/2010.

Date of issue/Date of revision

22/12/2010.

Date of previous issue

No previous validation.

Version

1

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.