

# MATERIAL SAFETY DATA SHEET

NK Cytolytic Competence Assay

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** NK Cytolytic Competence Assay  
**Synonyms:** Human CD16/Perforin Flow Cytometry Kit.  
**Product Use:** Immunophenotyping and immune status evaluation.  
**Manufacturer/Supplier:** MSDx Inc.  
9040 S. Rita Rd., Suite 1100,  
Tucson, AZ 85747  
**Phone Number:** (888) 647-6739  
**Emergency Phone:** (520) 907-3267  
**Date of Preparation:** September 20, 2011

## Section 2: HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

CAUTION

IRRITATING TO EYES. IRRITATING TO SKIN.

**Potential Health Effects:** See Section 11 for more information.

**Likely Routes of Exposure:** Skin contact, skin absorption, eye contact, inhalation, and ingestion.

- Eye:** Irritating to eyes. May cause burns.
- Skin:** Irritating to skin. Sodium azide is rapidly absorbed through the skin. In high concentrations, may be harmful in contact with skin or fatal if absorbed through skin.
- Ingestion:** May be harmful if swallowed. Causes stomach distress, nausea or vomiting. Sodium azide is rapidly absorbed from the gastrointestinal tract. May be fatal if ingested in high concentrations.
- Inhalation:** Irritating to respiratory system. May be fatal if high concentrations of sodium azide are inhaled.

**Chronic Effects:** Severe burns to skin, eyes and mucous membranes. General deterioration of overall health. Headache, breathlessness, hypotension, hypothermia, faintness, and convulsions or death.

**Signs and Symptoms:** Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Vapours may cause drowsiness and dizziness.

**Medical Conditions Aggravated By Exposure:** Product may aggravate preexisting skin, eye, and respiratory conditions.

**Target Organs:** Skin, eyes, gastrointestinal tract and respiratory system.

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Potential Environmental Effects:** May cause long-term adverse effects in the aquatic environment. See Section 12 for more information.

## Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS #	Wt. %
Sodium azide	26628-22-8	0.09

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## Section 4: FIRST AID MEASURES

**Eye Contact:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention immediately if contact was prolonged or irritation persists.

**Inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms persist or worsen.

**Ingestion:** If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Get medical attention immediately.

**General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or MSDS where possible).

**Note to Physicians:** Symptoms may not appear immediately.

## Section 5: FIRE FIGHTING MEASURES

**Flammability:** Not flammable by OSHA criteria.

**Means of Extinction:**

**Suitable Extinguishing Media:** Powder, water spray, foam, carbon dioxide.

**Unsuitable Extinguishing Media:** Not available.

**Products of Combustion:** Nitrogen oxides, sodium oxide, hydrazoic acid.

**Explosion Data:**

**Sensitivity to Mechanical Impact:** Hydrazoic acid is shock sensitive.

**Sensitivity to Static Discharge:** Not available.

**Protection of Firefighters:** Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

## Section 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition.

**Environmental Precautions:** Do not flush down drains. Over a period of time sodium azide may react with copper, lead, brass, or solder in plumbing systems to form an accumulation of the highly explosive compounds of lead azide and copper azide.

**Methods for Containment:** Contain and/or absorb spill with inert material (e.g. sand, diatomite, acid binders, universal binders), then place in a suitable container. Use appropriate Personal Protective Equipment (PPE).

**Methods for Clean-Up:** Scoop up material and place in a disposal container. Provide ventilation.

**Other Information:** Not available.

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## Section 7: HANDLING AND STORAGE

### Handling:

Keep away from sources of ignition. No smoking. Avoid contact with skin and eyes. Do not swallow. Do not breathe fumes. Use only in well-ventilated areas. Handle and open container with care. Launder contaminated clothing before re-use. Do not let product come into contact with any metal laboratory equipment (ex. metal spatula). When using do not eat or drink. Wash hands before eating, drinking, or smoking. Wash hands immediately after any contact with chemical.

### Storage:

Keep out of the reach of children. Keep container tightly closed and in a well-ventilated place. Store in a cool place. Do not store together with reducing agents, heavy-metal compounds, acids and alkalis.

## Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure Guidelines

Ingredient	Exposure Limits	
	OSHA-PEL	ACGIH-TLV
Sodium azide	0.1 ppm (as $\text{HN}_3$ ) [skin],	0.11 ppm (as $\text{HN}_3$ ) [skin],
	0.3 mg/m <sup>3</sup> (as $\text{NaN}_3$ ) [skin]	0.29 mg/m <sup>3</sup> (as $\text{NaN}_3$ ) [skin]

**Engineering Controls:** Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

### Personal Protective Equipment:

**Eye/Face Protection:** Chemical safety glasses as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

**Hand Protection:** Wear chemical resistant nitrile gloves.

**Skin and Body Protection:** Wear suitable protective clothing, including lab coat and closed shoes.

**Respiratory Protection:** Follow the OSHA respirator regulations found in 29 CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

**General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Clear.
<b>Color:</b>	Colorless.
<b>Odour:</b>	No odour.
<b>Odour Threshold:</b>	Not available.
<b>Physical State:</b>	Liquid.
<b>pH:</b>	7.2-7.6
<b>Viscosity:</b>	Not available.
<b>Freezing Point:</b>	Not available.
<b>Boiling Point:</b>	212 °F
<b>Flash Point:</b>	Not available.

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<b>Evaporation Rate:</b>	Not available.
<b>Lower Flammability Limit:</b>	Not available.
<b>Upper Flammability Limit:</b>	Not available.
<b>Vapor Pressure:</b>	1 mm Hg
<b>Vapor Density:</b>	Not available.
<b>Specific Gravity:</b>	1
<b>Solubility in Water:</b>	Not available.
<b>Coefficient of Water/Oil Distribution:</b>	Not available.
<b>Auto-ignition Temperature:</b>	Not available.
<b>Percent Volatile, wt. %:</b>	Not available.
<b>VOC content, wt. %:</b>	Not available.

## Section 10: STABILITY AND REACTIVITY

**Stability:** Stable under normal storage conditions. May decompose if heated. May be shock-sensitive.

**Conditions of Reactivity:** Aqueous solutions of sodium azide contain hydrazoic acid which volatilizes readily at 99 °F. Hydrazoic acid is a colorless, volatile, highly toxic, flammable and explosive liquid with a characteristic odor.

**Incompatible Materials:** Sodium azide reacts with heavy metals such as lead, copper, mercury, silver, gold and halides to form explosive compounds. Incompatible with benzoyl chloride, potassium hydroxide, bromine, carbon disulfide, chromyl chloride, copper, dibromomalononitrile, dimethyl sulfate, lead, and nitric acid. Avoid heat and high temperatures.

**Hazardous Decomposition Products:** Nitrogen oxides, sodium oxide, hydrazoic acid.

**Possibility of Hazardous Reactions:** Contact with acids liberates very toxic and explosive gas, hydrazoic acid vapor. When heated to approx. 527 °F, sodium azide may undergo violent decomposition.

## Section 11: TOXICOLOGY INFORMATION

### EFFECTS OF ACUTE EXPOSURE

#### Component Analysis

<b>Ingredient</b>	<b>LD<sub>50</sub> (oral)</b>	<b>LC<sub>50</sub></b>
Sodium azide	27 mg/kg, rat	37 mg/m <sup>3</sup> 4hr, rat

**Eye:** Irritating to eyes. May cause burns. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Skin:** Irritating to skin. Sodium azide is rapidly absorbed through the skin. In high concentrations, may be harmful in contact with skin or fatal if absorbed through skin. Symptoms may include redness, edema, drying, defatting and cracking of the skin.

**Ingestion:** May be harmful if swallowed. Causes stomach distress, nausea or vomiting. Sodium azide is rapidly absorbed from the gastrointestinal tract. May be fatal if ingested in high concentrations.

**Inhalation:** Irritating to respiratory system. May be fatal if high concentrations of sodium azide are inhaled. Vapours may cause drowsiness and dizziness.

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## EFFECTS OF CHRONIC EXPOSURE

**Target Organs:** Not available.

**Chronic Effects:** Not hazardous by OSHA criteria.

**Carcinogenicity:** Not hazardous by OSHA criteria.

### Ingredient

**Chemical Listed as Carcinogen or  
Potential Carcinogen \***

Sodium azide

G-A4

\* See Section 15 for more information.

**Mutagenicity:** Not hazardous by OSHA criteria.

**Reproductive Effects:** Not hazardous by OSHA criteria.

### Developmental Effects:

**Teratogenicity:** Not hazardous by OSHA criteria.

**Embryotoxicity:** Not hazardous by OSHA criteria.

**Respiratory Sensitization:** Not hazardous by OSHA criteria.

**Skin Sensitization:** Not hazardous by OSHA criteria.

**Toxicologically Synergistic Materials:** Not available.

## Section 12: ECOLOGICAL INFORMATION

**Ecotoxicity:** May cause long-term adverse effects in the aquatic environment.

**Persistence / Degradability:** Not available.

**Bioaccumulation / Accumulation:** Not available.

**Mobility in Environment:** Not available.

## Section 13: DISPOSAL CONSIDERATIONS

### Disposal Instructions:

This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

## Section 14: TRANSPORTATION INFORMATION

### DOT Classification

Not regulated

## Section 15: REGULATORY INFORMATION

### Federal Regulations

**US:** MSDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200).

### SARA Title III

#### Ingredient

**Section 302  
(EHS) TPQ (lbs.)**

**Section 304  
EHS RQ (lbs.)**

**CERCLA  
RQ (lbs.)**

**Section  
313**

Sodium azide

500

1,000

1,000

Listed.

### State Regulations

#### California Proposition 65:

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

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## Global Inventories

### Ingredient

Sodium azide

**USA  
TSCA**  
Yes.

## HMIS - Hazardous Materials Identification System

Health - 2

Flammability - 0

Physical Hazard - 0

PPE – B

## NFPA - National Fire Protection Association:

Health - 2

Fire - 0

Reactivity - 0

**Hazard Rating:** 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

## SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

**OSHA (O)** Occupational Safety and Health Administration.

**ACGIH (G)** American Conference of Governmental Industrial Hygienists.

A1 - Confirmed human carcinogen.

A2 - Suspected human carcinogen.

A3 - Animal carcinogen.

A4 - Not classifiable as a human carcinogen.

A5 - Not suspected as a human carcinogen.

**IARC (I)** International Agency for Research on Cancer.

1 - The agent (mixture) is carcinogenic to humans.

2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.

3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.

4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

**NTP (N)** National Toxicology Program.

1 - Known to be carcinogens.

2 - Reasonably anticipated to be carcinogens.

## Section 16: OTHER INFORMATION

### Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

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