

**Product Name: Long Ranger® Gel Solution**

## Material Safety Data Sheet

### SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY:

#### Identification Of The Substance/Preparation:

**Trade Name:** Long Ranger® Gel Solution

**Chemical Name:** Aqueous acrylamide gel solution

**Synonym:** Electrophoresis gel solution

**Canada PIN:** 2074

**Use Of The Substance:** For R&D/experimental use only

#### Company Identification:

Lonza Rockland, Inc.

191 Thomaston Street

Rockland, ME 04841-2994

USA

Business Telephone: (207) 594-3400

Emergency Telephone: 703-527-3887 (US: 800-424-9300)

### SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS:

| <u>Components</u>                          | <u>EINECS #</u> | <u>CAS #</u> | <u>Weight%</u> | <u>EU Classification</u>   |
|--|-----------------|--------------|----------------|--|
| acrylamide                                 | 201-173-7       | 79-06-1      | 20-40          | Carc. Cat. 2: R45; Muta. Cat. 2: R46; Repr. Cat. 3: R62; T: R25-48/23/24/25; Xn: R20/21; Xi: R36/38, R43 |
| formaldehyde                               | 200-001-8       | 50-00-0      | <0.3           | Carc Cat 3:R40, T:R23/24/25, C:R34 R43   |
| N-methylolacrylamide (NMA)                 | 213-103-2       | 924-42-5     | 5-15           | Carc cat 3: Xn: R40; Xn:R48/20/22, Xi:R36/38   |
| bis-acrylamide dimethyl ether              | not found       | 16958-71-7   | <2             | Xn: R20/21/22  |
| diacetone acrylamide                       | 220-713-2       | 2873-97-4    | <2             | Xn: R22  |
| di(ethylene glycol) diacrylate (DEGDA)     | 223-791-6       | 4074-88-8    | <2             | T:R24 Xi:R36/38 R43  |
| tetra(ethylene glycol) diacrylate (TREGDA) | 241-789-3       | 17831-71-9   | <2             | Xn: R22; C:R34; Xi: R41; Xn: R43   |
| N,N-methylene-bis-acrylamide               | 203-750-9       | 110-26-9     | <2             | T: Muta Cat 2: R46; Xn: R20/21/22, Xi: R36/37  |

### SECTION 3 - HAZARDS IDENTIFICATION:

**Emergency Overview:** Clear colorless aqueous solution. Harmful by ingestion, inhalation and on contact with skin. An irritant and potential sensitizer. Contains components associated with cancer, central and peripheral nervous system toxicity, reproductive toxicity, and liver and kidney effects in animal studies.

#### Health Effects:

**Inhalation:** May cause irritation, drowsiness, weakness, tiredness, and tingling sensation - especially tingling in extremities.

**Skin:** Expected to cause irritation. Absorbs through skin in harmful amounts. Acrylamide can cause redness and peeling of skin.

**Eyes:** Expected to cause irritation, including redness, tearing, and pain.

**Ingestion:** Expected to cause gastrointestinal irritation, nausea, vomiting, weakness, and diarrhea, as well as symptoms similar to inhalation.

**Chronic Effects/Target Organ Effects:** Contains components that are listed by IARC, NTP, and OSHA as suspect carcinogens. May cause chronic nervous system damage. May cause skin sensitization with symptoms including rash, redness, and itching. Target organ potentially effected by exposure include nerve tissues (central and peripheral nervous system), reproductive organs, lung, liver and kidney.

**Medical Conditions Aggravated By Exposure:** Pre-existing skin and nervous system disorders.

**Environmental Effects:** Not determined

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### **SECTION 4 - FIRST AID MEASURES:**

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Skin:** In case of contact, flush immediately with water. Use soap if available. Remove contaminated clothing and shoes. Get medical attention if symptoms develop. Wash clothing and shoes before reuse, or discard in a manner which limits further exposure.

**Eye:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately if irritation persists.

**Ingestion:** If swallowed, get medical attention immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

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### **SECTION 5 - FIRE FIGHTING MEASURES:**

**Extinguishing Media:** Dry chemical, fire-fighting foam, water spray, or carbon dioxide.

**Special Exposure Hazards:** This product is water-based. Under fire conditions the organic components remaining after the water evaporates are expected to burn generating toxic and irritating gases and smoke. Evacuate area and fight fire from safe distance.

**Special Protective Equipment:** Wear approved pressure-demand self-contained breathing apparatus and full protective gear.

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### **SECTION 6 - ACCIDENTAL RELEASE MEASURES:**

**Personal Precautions:** Prevent skin/eye contact. Use personal protective equipment as needed. Isolate spill area, preventing entry by unauthorized persons.

**Environmental Precautions:** Minimize entry of material into sewers and drainage systems. Refer to permit discharge limitations if applicable.

**Methods For Cleaning Up:** Clean up spills immediately, observing precautions in the material safety data sheet and label including the use of personal protective equipment. Absorb on inert materials such as compatible laboratory spill kits, dry sand, or dirt. Use methods that minimize contact and inhalation exposure. Dispose into a chemical waste container. Solid residues of acrylamide sublime and need to be clean-up and contained immediately.

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### **SECTION 7 - HANDLING AND STORAGE:**

**Handling:** Use with adequate ventilation as necessary. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Follow all MSDS/label precautions. Follow precautions for packaging that may product residues. Avoid contact with skin and eyes.

**Storage:** Keep container closed when not in use. Store in a cool (at or below 25°C), dry, well-ventilated area.

**Specific uses:** For R&D/experimental use only

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### **SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION:**

**Exposure Limit Values:** Acrylamide: OSHA PEL/TWA: 0.3 mg/m<sup>3</sup> (skin); ACGIH TLV/TWA: 0.03 mg/m<sup>3</sup> (skin)

Formaldehyde: OSHA PEL: 0.75 ppm TWA, 2 ppm STEL, 0.5 ppm action level; ACGIH TLV/C: 0.3 ppm

**Exposure Controls:** Avoid contact. Use process enclosures, local exhaust ventilation such as lab hoods, or other engineering controls as needed to control exposures.

**Respiratory Protection:** If a respirator is needed or desired, use an approved air-purifying respirator. Consult with respirator manufacturer to determine respirator selection, use, and limitations.

**Eye/Face Protection:** Use safety glasses. Where contact with the eyes is likely, use chemical goggles.

**Skin/Hand Protection:** Use chemical gloves as needed. Use clean protective body covering clothing as needed to minimize contact with clothing and skin.

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### **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES:**

**Appearance:** Clear, colorless aqueous solution

**Odor:** None

**Flash point:** Not available.

**Viscosity:** Not available.

**Solubility:** soluble

**Density (water = 1):** Not available.

**Partition Coefficient:** Not available.

**Boiling Point:** ~100 C

**Melting Point:** Not available.

**pH:** 6.8

**Other:** Not available.

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### **SECTION 10 - STABILITY AND REACTIVITY:**

**Stability:** Stable. May undergo polymerization if exposed to heat or ultraviolet light. If polymerization occurs in a closed container, sufficient pressure may build up to rupture the container.

**Conditions To Avoid:** Avoid contact with strong oxidizers, acids, bases, and polymerization initiators.

**Materials To Avoid:** Strong oxidizers and acids. Avoid contact with iron, copper, aluminum, brass, or bronze.

**Hazardous Decomposition Products:** Oxides of carbon and nitrogen.

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### **SECTION 11 - TOXICOLOGICAL INFORMATION:**

**Acrylamide:** Skin irritation: 500 mg/24-hrs - mild (rabbit); Eye irritation: 500 mg/24-hrs - moderate (rabbit); Oral LD50: 124 mg/kg (rat); Dermal LD50: 1680 uL/kg (rabbit); Positive in the in vitro chromosome aberration and sister chromatid exchange assays; Negative in the sex-linked recessive lethal assay; Negative to weakly positive in the Ames test; Some evidence of reproductive toxicity noted in multigenerational animal studies including testicular degeneration, reduced sperm motility, and impaired fertility; Monkeys exposed to 10 mg/kg exhibited impaired visual function; Acrylamide has been associated with cancer in animal drinking water studies.

**Formaldehyde:** Positive in several genotoxic assays; Oral LD50: 100 mg/kg (rat); dermal LD50: 270 uL/kg (rabbit); eye irritation 750 ug (rabbit) severe; Inhalation LC50: 203 mg/m<sup>3</sup> (rat); Suspect cancer hazard based on inhalation and drinking water studies in rats, as well as epidemiological studies that suggest nasopharyngeal cancers in people occupationally exposed. Results of acute toxicity testing for this product indicated an oral LD50 >500 mg/kg (rat) and a dermal LD50 >1,000 mg/kg (rabbit) - no mortality was noted.

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### **SECTION 12 - ECOLOGICAL INFORMATION:**

**Ecotoxicity:** Acrylamide: LC50/96-hour values for fish are over 100 mg/L

**Mobility:** Not available

**Persistence And Degradability:** Not available

**Bioaccumulative Potential:** Not available

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### **SECTION 13 - DISPOSAL CONSIDERATIONS:**

Dispose of unused product, residues, and containers according to local, regional, state, and national regulations.

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### **SECTION 14 - TRANSPORT INFORMATION:**

Not determined to be hazardous for transport.

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### **SECTION 15 - REGULATORY INFORMATION:**

#### **US Regulations:**

This product meets the following SARA 311/312 hazard categories: acute, chronic

This product contains the following SARA 302 Extremely Hazardous Substances: formaldehyde

This product contains acrylamide, N-methylolacrylamide, and formaldehyde, toxic chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

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CERCLA Reportable Quantity (RQ) substances: acrylamide: 5,000 lbs.; formaldehyde: 100 lbs.

This product contains acrylamide, N-methylolacrylamide, and formaldehyde, substances known to the State of California to cause cancer.

Acrylamide and formaldehyde are listed as IARC Group 2A carcinogens and NTP anticipated carcinogens.

Formaldehyde is regulated by OSHA as a potential cancer hazard under 29 CFR 1910.1048.

Not all components of this product are listed on the TSCA inventory. This product is for use in experimental/R&D applications only. Use only under the direct supervision of a technically qualified individual. Other uses are not authorized.

### EU Regulations:

This product meets the following classification and labeling criteria under 1999/45/EC as a dangerous preparation:

Carc. Cat. 2: T: R45: May cause cancer.

Muta. Cat. 2: T: R46: May cause heritable genetic damage.

Repr. Cat. 3: Xn: R62: Possible risk of impaired fertility.

T: R25: Toxic if swallowed.

T: R48/23/24/25: Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

Xn: R20/21: Harmful by inhalation and in contact with skin.

Xi: R36/38: Irritating to eyes and skin.

Xi: R43: May cause sensitization by skin contact.

S45: In case of accident or if you feel unwell, seek medical advice immediately.

S53: Avoid exposure - obtain special instructions before use.

Not all components of this product are listed on EINECS.

### Canadian Regulations:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and it contains the information required by the CPR.

This product meets WHMIS classification D2A and D2B. Acrylamide and formaldehyde are listed on the WHMIS Ingredient Disclosure List.

Not all components of this product are listed on the DSL.

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### SECTION 16 - OTHER INFORMATION:

**NFPA/HMIS Ratings:** Health = 2\*; Fire = 1; Reactivity = 1; NFPA/Special = None

#### Other Information:

R-phrases used in section 2, but not listed section 15

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

R22: Harmful if swallowed.

R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.

R24: Toxic in contact with skin.

R34: Causes burns.

R36/37: Irritating to eyes and respiratory system.

R40: Possible risk of cancer.

R41: Risk of serious damage to eyes.

R48/20/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

**MSDS Revisions:** July 2009: Rev. 4.0

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