



Mirus Bio Corporation  
505 S. Rosa Rd.  
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## Material Safety Data Sheet

### Section I - Product Identification

**Product Name** *Label IT*<sup>®</sup>  $\mu$ Array<sup>™</sup> Dual Labeling Kit – Reconstitution Solution and Labeling Reagents  
**Part#** Not available separately; Part of MIR 8105, 8125  
**Product Use** Research Laboratory

### Precautionary Labeling

We are unaware of any hazards with these products when mixed other than those associated with the individual reagents listed below.

### Section II - Components

<u>Component</u>	<u>CAS#</u>	<u>Hazard</u>	<u>Weight %</u>
Dimethyl sulfoxide (DMSO)	67-68-5	Irritant. Irritating to eyes, respiratory system and skin. Readily absorbed through skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not breath vapor.	100
Labeling Reagent (LR)	Proprietary	The hazards of this reagent are not fully characterized. Potentially harmful – handle with care. Labeling reagent covalently modifies nucleic acids.	100 <0.1 when reconstituted

### Section III - Physical Data

<b>Appearance</b>	(DMSO) clear liquid (LR) dried film	<b>Specific Gravity</b>	(DMSO) 1.101
<b>Boiling Point</b>	(DMSO) 189°C	<b>Vapor Pressure (mmHg)</b>	(DMSO) 0.42
<b>Melting Point</b>	(DMSO) 18.4°C		

### Section IV - Fire and Explosion Hazard Data

<b>Flash Point</b>	(DMSO) 85°C	<b>UEL (%)</b>	(DMSO) 63
<b>Autoignition Temp.</b>	(DMSO) 300°C	<b>LEL (%)</b>	(DMSO) 3.5

#### Fire Extinguishing Media

Use water spray, carbon dioxide, dry chemical powder or appropriate foam.

#### Special Fire-Fighting Procedures

Avoid breathing vapors. Use self-contained breathing apparatus. Prevent contact with skin and eyes. Firefighters should wear proper protective equipment.

#### Unusual Fire and Explosion Hazards

(DMSO) Emits toxic fumes under fire conditions.  
(LR) None known.

### Section V - Health Hazard Data

<b>TLV</b>	N/A	<b>Oral Rat LD<sub>50</sub></b>	(DMSO) 14500mg/kg
<b>STEL</b>	N/A	<b>Carcinogenicity</b>	N/A
<b>PEL</b>	N/A		

<b>Section VI - Reactivity Data</b>			
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<b>Stability</b>	(DMSO) Stable. Not a significant hazard in these quantities.	<b>Incompatibilities</b>	(DMSO) Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents.
<b>Conditions to Avoid</b>	(DMSO) Excessive heat and incompatible materials.	<b>Decomposition Products</b>	(DMSO) Carbon monoxide, carbon dioxide, sulfur oxides.

<b>Section VII - Spills and Disposal</b>	
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**Spills**  
Evacuate area. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Absorb with sand or vermiculite and place in closed container for disposal. Ventilate area and wash spill site after material pickup is complete.

**Disposal**  
Dispose in accordance with all applicable federal, state, and local regulations.

<b>Section VIII - Protective Equipment</b>	
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**Ventilation**  
Mechanical ventilation is recommended.

**Respiratory Protection**  
Recommended.

**Eye/Skin Protection**  
Gloves, protective clothing, and eyewear should be worn and safe laboratory practices followed.

<b>Section IX - Storage and Handling</b>	
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**Storage Requirements**  
(DMSO) Refrigeration. (LR) Freezer storage recommended. Protect from light.

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## Material Safety Data Sheet

### Section I - Product Identification

**Product Name** *Label IT<sup>®</sup> μArray<sup>™</sup> Dual Labeling Kit – Reagent D1*  
**Part#** Not available separately; Part of MIR 8105, 8125  
**Product Use** Research Laboratory

### Precautionary Labeling

We are unaware of any hazards with these products other than those associated with the individual components of each reagent listed below.

### Section II - Components

<u>Component</u>	<u>CAS#</u>	<u>Hazard</u>	<u>Weight %</u>
Water	7732-18-5	N/A	88
Sodium hydroxide	1310-73-2	Corrosive. Causes digestive burns. Causes severe eye and skin burns. Target organs: none. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.	12

### Section III - Physical Data

<b>Appearance</b>	colorless liquid	<b>Boiling Point</b>	105°C
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### Section IV - Fire and Explosion Hazard Data

<b>Flash Point</b>	N/A	<b>UEL (%)</b>	N/A
<b>Autoignition Temp.</b>	N/A	<b>LEL (%)</b>	N/A

#### Fire Extinguishing Media

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

#### Special Fire-Fighting Procedures

Avoid breathing vapors. Use self-contained breathing apparatus. Prevent contact with skin and eyes. Firefighters should wear proper protective equipment.

#### Unusual Fire and Explosion Hazards

Use water with caution in flooding amounts. Contact with moisture or water may generate sufficient heat to ignite nearby combustible materials.

### Section V - Health Hazard Data

<b>PEL</b>	2 mg/m <sup>3</sup>	<b>Oral Rat LD<sub>50</sub></b>	140-340 mg/kg
		<b>Carcinogenicity</b>	not listed

<b>Section VI - Reactivity Data</b>
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<b>Stability</b>	Stable under normal temperatures and pressures.	<b>Incompatibilities</b>	Strong acids. Absorbs carbon dioxide from air.
<b>Conditions to Avoid</b>	Incompatible materials.	<b>Decomposition Products</b>	Not known.

<b>Section VII - Spills and Disposal</b>
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**Spills**  
Evacuate area. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Absorb with sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

**Disposal**  
Dispose in accordance with all applicable federal, state, and local regulations.

<b>Section VIII - Protective Equipment</b>
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**Ventilation**  
Only use in a chemical fume hood.

**Respiratory Protection**  
Wear appropriate NIOSH/MSHA-approved respirator.

**Eye/Skin Protection**  
Wear safety goggles or face shield, chemical resistant gloves and impervious protective clothing. Have a safety shower and eye bath available.

<b>Section IX - Storage and Handling</b>
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**Storage Requirements**  
Keep tightly closed. Store in a cool dry place away from incompatible substances.

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## Material Safety Data Sheet

### Section I - Product Identification

**Product Name** *Label IT<sup>®</sup> μArray<sup>™</sup> Dual Labeling Kit – Neutralization Buffer N1*  
**Part#** not available separately; Part of MIR 8105, 8125  
**Product Use** Research Laboratory

### Precautionary Labeling

We are unaware of any hazards with these products other than those associated with the individual components of each reagent listed below.

### Section II - Components

<u>Component</u>	<u>CAS#</u>	<u>Hazard</u>	<u>Weight %</u>
Water	7732-18-5	N/A	77
Hydrochloric acid	7647-01-0	Corrosive. Poison. Causes eye and skin burns. May cause severe respiratory and digestive tract irritation with possible burns. Do not breathe vapor. Target organs: none. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.	11
Tris(hydroxymethyl)-aminomethane	77-86-1	Irritant. Irritating to eyes, respiratory system and skin.	12

### Section III - Physical Data

**Appearance** colorless liquid      **Boiling Point** 100°C

### Section IV - Fire and Explosion Hazard Data

**Flash Point** N/A      **UEL (%)** N/A  
**Autoignition Temp.** N/A      **LEL (%)** N/A

#### Fire Extinguishing Media

Use water spray, dry chemical powder, carbon dioxide or appropriate foam.

#### Special Fire-Fighting Procedures

Avoid breathing vapors. Use self-contained breathing apparatus. Prevent contact with skin and eyes. Firefighters should wear proper protective equipment.

#### Unusual Fire and Explosion Hazards

Emits toxic fumes under fire conditions.

### Section V - Health Hazard Data

**PEL** HCl: 5 ppm;  
Tris: 7 mg/m<sup>3</sup>      **Oral Rat LD<sub>50</sub>** HCl: 900 mg/kg  
Tris: 5900 mg/kg  
**Carcinogenicity** HCl: IARC Group 3 carcinogen: Inadequate human and animal evidence.

<b>Section VI - Reactivity Data</b>			
<b>Stability</b>	Stable under normal temperatures and pressures.	<b>Incompatibilities</b>	Bases, amines, alkali metals, copper, copper alloys, aluminum and oxidizing reagents. Corrodes steel.
<b>Conditions to Avoid</b>	Incompatible materials; light.	<b>Decomposition Products</b>	HCl: Hydrogen chloride gas. Tris: Thermal decomposition may produce carbon monoxide, carbon dioxide, and nitrogen oxides.

<b>Section VII - Spills and Disposal</b>
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**Spills**

Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Large spills can be neutralized with dilute alkaline solutions of soda ash or lime. Absorb with a non-combustible material such as sand or vermiculite and place in closed container for disposal. Ventilate area and wash spill site after material pickup is complete.

**Disposal**

For small quantities: cautiously add to a large stirred excess of water. Adjust pH to neutral, separate any insoluble solids and package then for hazardous-waste disposal. Flush the aqueous solution down the drain with plenty of water. The hydrolysis and neutralization reactions may generate heat and fumes which can be controlled by rate of addition. Dispose in accordance with all applicable federal, state, and local regulations.

<b>Section VIII - Protective Equipment</b>
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**Ventilation**

Mechanical exhaust required.

**Respiratory Protection**

Wear appropriate NIOSH/MSHA-approved respirator.

**Eye/Skin Protection**

Wear safety goggles, chemical resistant gloves and impervious protective clothing. Have a safety shower and eye bath available.

<b>Section IX - Storage and Handling</b>
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**Storage Requirements**

Keep container tightly closed. Store in a cool, dry, well-ventilated area away from heat and flame.

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## Material Safety Data Sheet

### Section I - Product Identification

**Product Name** *Label IT<sup>®</sup> μArray<sup>™</sup> Dual Labeling Kit – 0.5 M EDTA, 5X Fragmentation Buffer*  
**Part#** Not available separately; Part of MIR 8105, 8125  
**Product Use** Research Laboratory

### Precautionary Labeling

We are unaware of any hazards with these products other than those associated with the individual components of each reagent listed below.

### Section II - Components

<u>Component</u>	<u>CAS#</u>	<u>Hazard</u>	<u>Weight %</u>
EDTA	6381-92-6	Irritant. Irritating to eyes, respiratory system and skin.	14.6
Water	7732-18-5	N/A	85.4
Tris(hydroxymethyl)-aminomethane (component of 5X Fragmentation Buffer)	77-86-1	Irritant. Irritating to eyes, respiratory system and skin.	2.4
Magnesium Acetate (component of 5X Fragmentation Buffer)	16674-78-5	Caution. Avoid contact and inhalation. Target organs central nervous system, G.I. system.	3.2
Potassium Acetate (component of 5X Fragmentation Buffer)	127-08-02	Avoid contact and inhalation.	4.9
Water	7732-18-5		89.5

### Section III - Physical Data

**Appearance** clear colorless liquid      **Boiling Point** N/A (similar to water)

### Section IV - Fire and Explosion Hazard Data

**Flash Point** not combustible      **UEL (%)** N/A  
**Autoignition Temp.** N/A      **LEL (%)** N/A

#### Fire Extinguishing Media

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

#### Special Fire-Fighting Procedures

Avoid breathing vapors. Use self-contained breathing apparatus. Prevent contact with skin and eyes. Firefighters should wear proper protective equipment.

#### Unusual Fire and Explosion Hazards

Irritating and/or toxic fumes may be generated by thermal decomposition or combustion.

### Section V - Health Hazard Data

<b>PEL</b>	N/A	<b>Oral Rat LD<sub>50</sub></b>	N/A
		<b>Carcinogenicity</b>	not listed

<b>Section VI - Reactivity Data</b>
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<b>Stability</b>	Stable under normal temperatures and pressures.	<b>Incompatibilities</b>	N/A
<b>Conditions to Avoid</b>	Strong oxidizing agents.	<b>Decomposition Products</b>	(5X Fragmentation Buffer) carbon monoxide, carbon dioxide, magnesium oxide, potassium oxides, nitrogen oxides

<b>Section VII - Spills and Disposal</b>
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**Spills**

Absorb spill with inert material. Wash spill area thoroughly.

**Disposal**

Dispose in accordance with all applicable federal, state, and local regulations.

<b>Section VIII - Protective Equipment</b>
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**Ventilation**

Not expected to require any special ventilation.

**Respiratory Protection**

None needed.

**Eye/Skin Protection**

Wear safety goggles or face shield, chemical resistant gloves and impervious protective clothing. Have a safety shower and eye bath available.

<b>Section IX - Storage and Handling</b>
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**Storage Requirements**

Keep tightly closed. Store in at -20°C away from incompatible substances.

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## Material Safety Data Sheet

### Section I - Product Identification

**Product Name** *Label IT<sup>®</sup> μArray<sup>™</sup> Dual Labeling Kit – 10X STOP Reagent*  
**Part#** Not available separately; Part of MIR 8105, 8125  
**Product Use** Research Laboratory

### Precautionary Labeling

We are unaware of any hazards with these products other than those associated with the individual components of each reagent listed below.

### Section II - Components

<u>Component</u>	<u>CAS#</u>	<u>Hazard</u>	<u>Weight %</u>
Water	7732-18-5	N/A	87
Sodium chloride	7647-14-5	Avoid inhalation. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. In case of contact, wash immediately with copious amounts of water.	13

### Section III - Physical Data

<b>Appearance</b>	colorless liquid	<b>Boiling Point</b>	N/A
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### Section IV - Fire and Explosion Hazard Data

<b>Flash Point</b>	N/A	<b>UEL (%)</b>	N/A
<b>Autoignition Temp.</b>	N/A	<b>LEL (%)</b>	N/A

#### Fire Extinguishing Media

Noncombustible. Use water spray to cool fire-exposed containers.

#### Special Fire-Fighting Procedures

Emits toxic fumes under fire conditions; avoid breathing vapors. Use self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

### Section V - Health Hazard Data

<b>PEL</b>	N/A	<b>Oral Rat LD<sub>50</sub></b>	N/A
		<b>Carcinogenicity</b>	N/A

### Section VI - Reactivity Data

<b>Stability</b>	Stable under normal temperatures and pressures.	<b>Incompatibilities</b>	Strong oxidizing agents.
<b>Conditions to Avoid</b>	Incompatible materials.	<b>Decomposition Products</b>	Not known.

**Section VII - Spills and Disposal**

**Spills**

Wear respirator, safety goggles, rubber boots and heavy rubber gloves. Absorb with sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

**Disposal**

Contact a licensed professional waste disposal service to dispose of material. Mix or dissolve the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with all applicable federal, state, and local regulations.

**Section VIII - Protective Equipment**

**Respiratory Protection**

Wear appropriate NIOSH/MSHA-approved respirator.

**Eye/Skin Protection**

Wear safety goggles or face shield, chemical resistant gloves and impervious protective clothing. Have a safety shower and eye bath available.

**Section IX - Storage and Handling**

**Storage Requirements**

Keep tightly closed. Store in a cool dry place away from incompatible substances.

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