



Mirus Bio Corporation
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Material Safety Data Sheet

Section I - Product Identification

Product Name *Label IT*[®] FISH Kit – Reconstitution Solution and Labeling Reagent
Part# Not available separately; Part of MIR6510, 6512, 6513, 6514, 6520, 6522, 6523, 6524
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	Potentially harmful – handle with care. Labeling reagent covalently modifies nucleic acids.	100 <0.1 when reconstituted

Section III - Physical Data

Appearance	(DMSO) clear liquid (LR) dried film	Specific Gravity	(DMSO) 1.101
Boiling Point	(DMSO) 189°C	VaporPressure (mmHg)	0.42
Melting Point	(DMSO) 18.4°C		

Section IV - Fire and Explosion Hazard Data

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

Fire Extinguishing Media

(DMSO and LR): 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

TLV	N/A	Oral Rat LD₅₀	(DMSO) 14500mg/kg
STEL	N/A	Carcinogenicity	N/A
PEL	N/A		

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

Section VII - Spills and Disposal	
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.

Section VIII - Protective Equipment	
Ventilation	Mechanical ventilation is recommended.
Respiratory Protection	Recommended.
Eye/Skin Protection	Gloves, protective clothing, and eyewear should be worn and safe laboratory practices followed.

Section IX - Storage and Handling	
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[®] FISH- D1 buffer*
Part# Not available separately; Part of MIR6510, 6512, 6513, 6514, 6520, 6522, 6523, 6524
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

Appearance	colorless liquid	Boiling Point	105°C
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Section IV - Fire and Explosion Hazard Data

Flash Point	not available	UEL (%)	not available
Autoignition Temp.	not available	LEL (%)	not available

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

PEL	2 mg/m ³	Oral Rat LD₅₀	140-340 mg/kg
		Carcinogenicity	not listed

Section VI - Reactivity Data

Stability	Stable under normal temperatures and pressures.	Incompatibilities	Strong acids. Absorbs carbon dioxide from air.
Conditions to Avoid	Incompatible materials.	Decomposition Products	Not known.

Section VII - Spills and Disposal

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.

Section VIII - Protective Equipment

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.

Section IX - Storage and Handling

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[®] FISH - N1 buffer*
Part# not available separately; Part of MIR6510, 6512, 6513, 6514, 6520, 6522, 6523, 6524
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
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Section IV - Fire and Explosion Hazard Data

Flash Point	not available	UEL (%)	not available
Autoignition Temp.	not available	LEL (%)	not available

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; 7 mg/m ³	Oral Rat LD₅₀	HCl: 900 mg/kg Tris: 5900 mg/kg
		Carcinogenicity	HCl: IARC Group 3 carcinogen: Inadequate human and animal evidence.

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

Section VII - Spills and Disposal
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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.

Section VIII - Protective Equipment
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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.

Section IX - Storage and Handling
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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*[®] FISH-Hybridization Solution
Part# not available separately; Part of MIR6510, 6512, 6513, 6514, 6520, 6522, 6523, 6524
Product Use Research Laboratory

Precautionary Labeling

As yet, the physical, chemical and toxicological properties of this kit component has not been thoroughly investigated. Avoid contact with skin, eyes, clothing. 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

Component	CAS#	Hazard	Weight %
Formamide based solution	proprietary	Mists and heated vapors are irritating. Irritant to upper respiratory tract and eyes. May be teratogenic.	100

Section III - Physical Data

Appearance Clear liquid.

Section IV - Fire and Explosion Hazard Data

Flash Point	not available	UEL (%)	not available
Autoignition Temp.	not available	LEL (%)	not available

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

Moderate, when exposed to heat or flames. Can react with oxidizing materials.

Section V - Health Hazard Data

Overexposure

May be harmful by inhalation, ingestion or skin absorption. Irritant. Danger of serious irreversible effects. May be teratogenic.

Emergency First Aid

Wash affected area with water. Irrigate eyes for at least 15 minutes. Seek medical attention.

Section VI - Reactivity Data

Stability	Stable under normal temperatures and pressures.	Incompatibilities	Strong oxidizing agents, protect from moisture, acids, and bases.
Conditions to Avoid		Decomposition Products	Toxic fumes of CO, CO ₂ , nitrogen oxides and sulfur oxides.

Section VII - Spills and Disposal

- Spills** Absorb on sand and place in open container for disposal. Ventilate area and wash spill site thoroughly.
- Disposal** Dispose according to federal and local regulations.

Section VIII - Protective Equipment

- Ventilation** Not expected to require any special ventilation.
- Respiratory Protection** Not expected to require personal respirator usage.
- Eye/Skin Protection** Full eye protective goggles and nesprene or PVC gloves.

Section IX - Storage and Handling

- Handling and Storage Requirements** Cold Storage: -20°C.

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