

SAFETY DATA SHEET (SDS)



Product Name:

Product Number:

Revision Date:

Print Date:

This kit contains the following components. The required Safety Data Sheets for identified hazardous components are appended.

- *Label IT*® Labeling Reagent
- Reconstitution Solution
- 10X Labeling Buffer A
- Denaturation Reagent D1
- Neutralization Buffer N1

Disclaimer: Mirus Bio LLC believes that the information on this SDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, Mirus Bio LLC does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling and disposal of this product.

Section 1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier:

1.1.1. **Product Name:** *Label IT*® Labeling Reagent

1.1.2. **Product Code:** Part of MIR 3100, 3125, 3200, 3225, 3300, 3325, 3400, 3425, 3600, 3625, 3700, 3725, 3800, 3825, 3900, 3925, 4100, 4125, 7100, 7125, 7212, 7213, 7214, 7215, 7216, 7217, 7020, 7021, 7022, 7023, 7024, and 7025

1.1.3. **CAS No.:** Not applicable.

1.2. Relevant Identified Uses of the Mixture and Uses Advised Against:

1.2.1. **Identified Uses:** For research use only.

1.2.2. **Uses Advised Against:** Not known.

1.3. Details of the Supplier of the SDS:

1.3.1. **Company:** Mirus Bio LLC

1.3.2. **Address:** 5602 Research Park Blvd, Suite 210, Madison, WI 53719, USA

1.3.3. **Telephone No.:** 888.530.0801 (Toll Free within the U.S.) or +1.608.441.2852

1.3.4. **Fax:** +1.608.441.2849

1.3.5. **Email:** info@mirusbio.com

1.4. Emergency Telephone No.:

1.4.1. US and Canada: +1.800.633.8253

1.4.2. International: +1.801.629.0667

Section 2. HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture:

US CFR 1910.1200

This substance or mixture is not considered hazardous.

2.2. Label Elements:

2.2.1. **Product Name:** *Label IT*® Labeling Reagent

2.2.2. **Hazard Pictogram(s):** Not applicable.

2.2.3. **Signal Word(s):** Not applicable.

2.2.4. **Hazard Statement(s):** Not applicable.

2.2.5. **Precautionary Statement(s):** Not applicable.

2.3. Other Hazards:

Not applicable.

2.4. Additional Information:

None.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances:

Not applicable.

3.2. Mixtures:

This mixture contains no ingredients at their given concentration considered to be hazardous to health.

Section 4. FIRST AID MEASURES

4.1. Description of First Aid Measures:

4.1.1. Inhalation: Treat symptomatically.

4.1.2. Skin Contact: Take off all contaminated clothing immediately. Rinse skin with water.

4.1.3. Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a poison center and/or doctor.

4.1.4. Ingestion: Rinse mouth with water. Treat symptomatically.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed:

No information available.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed:

Call a poison center and/or doctor. Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing Media:

5.1.1. Suitable Extinguishing Media:

Use extinguishing media that is appropriate to local circumstances and environment.

5.1.2. Unsuitable Extinguishing Media:

No information available.

5.2. Specific Hazards Arising from the Mixture:

None known.

5.3. Advice for Firefighters:

Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures:

Provide adequate ventilation. Wear suitable protective clothing, gloves and eye/face protection.

6.2. Environmental Precautions:

This material and its container must be disposed of in a safe way.

6.3. Methods and Materials for Containment and Cleaning Up:

Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for Safe Handling:

Handle in accordance with good industrial hygiene and safety practices. Wear protective gloves and eye/face protection.

7.2. Conditions for Safe Storage, Including Any Incompatibilities:

Store tightly closed in a well-ventilated place. Keep cool.

7.2.1. Storage Temperature: -20°C.

7.2.2. Storage Life: Stable under normal conditions.

7.3. Specific End Use(s):

For research use only.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters:

8.1.1. Occupational Exposure Limits: Not applicable.

8.2. Exposure Controls:

8.2.1. Appropriate Engineering Controls:

Ensure adequate ventilation. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2. Personal Protective Equipment:

8.2.2.1. Eye Protection: Tightly fitting safety glasses with side shields.

8.2.2.2. Skin Protection: Protective clothing and gloves.

8.2.2.3. Respiratory Protection: Normally no personal respiratory protection is necessary.

8.2.2.4. Thermal Hazards: None known.

8.3. Environmental Exposure Controls:

Avoid release to the environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties:

9.1.1. Appearance Dried solid pellet

9.1.2. Odor: No data available.

9.1.3. Odor Threshold: No data available.

9.1.4. pH: No data available.

9.1.5. Melting Point/freezing Point: No data available.

9.1.6. Initial Boiling Point and Boiling Range: No data available.

9.1.7. Flash Point: No data available.

9.1.8. Evaporation Rate: No data available.

9.1.9. Flammability (Solid, Gas): No data available.

9.1.10. Upper/lower Flammability or Explosive Limits:

Upper explosion limit: No data available.

Lower explosion limit: No data available.

9.1.11. Vapor Pressure: No data available.

9.1.12. Vapor Density: No data available.

9.1.13. Density: No data available.

9.1.14. Relative Density: No data available.

9.1.15. Solubility(ies): Completely miscible, alcohol soluble, diethylether soluble.

9.1.16. Partition Coefficient: No data available.

9.1.17. Auto-ignition Temperature: No data available.

9.1.18. Decomposition Temperature: No data available.

9.1.19. Viscosity: No data available.

9.1.20. Explosive Properties: No data available.

9.1.21. Oxidizing Properties: No data available.

9.2. Other Information: None.

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity: None anticipated.

10.2. Chemical Stability: Stable under recommended storage conditions.

10.3. Possibility of Hazardous Reactions: No hazardous reactions known if used for its intended purpose.

10.4. Conditions to Avoid: None known.

10.5. Incompatible Materials: No data available.

10.6. Hazardous Decomposition Products: No data available.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects:

- 11.1.1. **Acute Toxicity – Ingestion:** Not classified.
- 11.1.2. **Acute Toxicity – Skin Contact:** Not classified.
- 11.1.3. **Acute Toxicity – Inhalation:** Not classified.
- 11.1.4. **Skin Corrosion/irritation:** Not classified.
- 11.1.5. **Serious Eye Damage Irritation:** Not classified.
- 11.1.6. **Skin Sensitization Data:** Not classified.
- 11.1.7. **Respiratory Sensitization Data:** Not classified.
- 11.1.8. **Germ Cell Mutagenicity:** Not classified.

11.1.9. **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

- 11.1.10. **Reproductive Toxicity:** Not classified.
- 11.1.11. **Lactation:** Not classified.
- 11.1.12. **Specific Target Organ Toxicity - Single Exposure:** Not classified.
- 11.1.13. **Specific Target Organ Toxicity - Repeated Exposure:** Not classified.
- 11.1.14. **Aspiration Hazard:** Not classified.

11.2. Additional Information: None.

SECTION 12. ECOLOGICAL INFORMATION

- 12.1. **Ecotoxicity (Aquatic and Terrestrial, Where Available):** No data available.
- 12.2. **Persistence and Degradation:** No data available.
- 12.3. **Bioaccumulative potential:** No data available.
- 12.4. **Mobility in Soil:** No data available.
- 12.5. **Other Adverse Effects:** No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

- 13.1. **Waste Treatment Methods:** Remove waste in accordance with local and/or national regulations. Offer surplus and non-recyclable solutions to a licensed disposal company.
- 13.2. To minimize exposure, refer to Section 8 (Exposure Controls/Personal Protection) of the SDS.

SECTION 14. TRANSPORT INFORMATION

- 14.1. **UN Number:** Not regulated.
- 14.2. **UN Proper Shipping Name:** Not regulated.
- 14.3. **Transport Hazard Class(es):** Not regulated.
- 14.4. **Packing Group, If Applicable:** Not regulated.

- 14.5. Environmental Hazards:** Not classified as a marine pollutant.
- 14.6. Guidance on Transport in Bulk (According to Annex II of MARPOL 73/783 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code)):** None.
- 14.7. Other Special Precautions Related to Transport:** None.

SECTION 15. REGULATORY INFORMATION

- 15.1. Safety, Health and Environmental Regulations Specific for the Product in Question:**
SARA 302/313 Components

SARA 302: This material is not subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

- SARA 311/312 Hazards**

None.

- California Prop. 65 Components**

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

- Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product does not contain HAPs.

- WHMIS Hazard Class**

Non-controlled. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

SECTION 16. OTHER INFORMATION

- 16.1. Revision Date:** 18 June 2020
- 16.2. Reason for Revision:** Change in address of supplier.
- 16.3. Additional Information:** None.

Disclaimer: Mirus Bio LLC believes that the information on this SDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, Mirus Bio LLC does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling.

Section 1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier:

1.1.1. Product Name: Reconstitution Solution

1.1.2. Product Code: Part of MIR 3100, 3125, 3200, 3225, 3300, 3325, 3400, 3425, 3600, 3625, 3700, 3725, 3800, 3825, 3900, 3925, 4100, 4125, 7100, 7125, 7212, 7213, 7214, 7215, 7216, 7217, 7020, 7021, 7022, 7023, 7024, and 7025

1.1.3. CAS No.: Not applicable.

1.2. Relevant Identified Uses of the Mixture and Uses Advised Against:

1.2.1. Identified Uses: For research use only.

1.2.2. Uses Advised Against: Not known.

1.3. Details of the Supplier of the SDS:

1.3.1. Company: Mirus Bio LLC

1.3.2. Address: 5602 Research Park Blvd, Suite 210, Madison, WI 53719, USA

1.3.3. Telephone No.: 888.530.0801 (Toll Free within the U.S.) or +1.608.441.2852

1.3.4. Fax: +1.608.441.2849

1.3.5. Email: info@mirusbio.com

1.4. Emergency Telephone No.:

1.4.1. US and Canada: +1.800.633.8253

1.4.2. International: +1.801.629.0667

Section 2. HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture:

US CFR 1910.1200 Flammable liquids (Category 4), H227

2.2. Label Elements:

2.2.1. Product Name: Reconstitution Solution

2.2.2. Hazard Pictogram(s): None

2.2.3. Signal Word(s): Warning

2.2.4. Hazard Statement(s): H227: Combustible liquid.

2.2.5. Precautionary Statement(s):

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P370+P378: In case of fire: Use water spray, dry powder or carbon dioxide to extinguish.

P403+P235: Store in a well-ventilated place. Keep cool.

P501: Dispose of contents in accordance with local, state or national legislation.

2.3. Other Hazards:

None known.

2.4. Additional Information: None.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances:

Not applicable.

3.2. Mixtures:

Hazardous Ingredient(s)	CAS No.	%W/W	Hazard Statement(s)	Hazard Pictogram(s)
Dimethyl sulfoxide	67-68-5	>99	Flam. Liq. 4 H227	None

Section 4. FIRST AID MEASURES

4.1. Description of First Aid Measures:

4.1.1. Inhalation: Treat symptomatically.

4.1.2. Skin Contact: Take off all contaminated clothing immediately. Rinse skin with water.

4.1.3. Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a poison center and/or doctor.

4.1.4. Ingestion: Rinse mouth with water. Treat symptomatically.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed:

None known.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed:

Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing Media:

5.1.1. Suitable Extinguishing Media:

Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.1.2. Unsuitable Extinguishing Media:

None known.

5.2. Specific Hazards Arising from the Mixture:

Carbon and sulfur oxides.

5.3. Advice for Firefighters:

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures:

Provide adequate ventilation. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Wear suitable protective clothing, gloves and eye/face protection.

6.2. Environmental Precautions:

This material and its container must be disposed of in a safe way.

6.3. Methods and Materials for Containment and Cleaning Up:

Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Containers must not be punctured or destroyed by burning, even when empty.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for Safe Handling:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting/equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection.

7.2. Conditions for Safe Storage, Including Any Incompatibilities:

Keep container tightly closed in a dry and well-ventilated place. Store under inert gas. Hygroscopic. Storage class (TRGS 510): 10: Combustible liquids.

7.2.1. Storage Temperature: -20°C.

7.2.2. Storage Life: Stable under normal conditions.

7.3. Specific End Use(s):

For research use only.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters:

8.1.1. Occupational Exposure Limits:

Dimethyl sulfoxide (67-68-5)		
USA OSHA	OSHA PEL (TWA) (ppm)	250 ppm

8.2. Exposure Controls:

8.2.1. Appropriate Engineering Controls:

Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Ensure adequate ventilation. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2. Personal Protective Equipment:

8.2.2.1. Eye Protection: Tightly fitting safety glasses with side shields.

8.2.2.2. Skin Protection: Protective clothing and gloves.

8.2.2.3. Respiratory Protection: Normally no personal respiratory protection is necessary.

8.2.2.4. Thermal Hazards: None known.

8.3. Environmental Exposure Controls:

Avoid release to the environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties:

9.1.1. Appearance Liquid
Color: colorless.

9.1.2. Odor: No data available.

9.1.3. Odor Threshold: No data available.

9.1.4. pH: No data available.

9.1.5. Melting Point/freezing Point: 16-19 °C (61-66 °F)

9.1.6. Initial Boiling Point and Boiling Range: 189 °C (372 °F)

9.1.7. Flash Point: 87 °C (189 °F) - closed cup

9.1.8. Evaporation Rate: No data available.

9.1.9. Flammability (Solid, Gas): No data available.

9.1.10. Upper/lower Flammability or Explosive Limits:

Upper explosion limit: 42 % (V)
Lower explosion limit: 3.5 % (V)

9.1.11. Vapor Pressure: 0.55 hPa at 20.0 °C (68.0 °F)

9.1.12. Vapor Density: 2.7 – (Air = 1.0)

9.1.13. Density: No data available.

9.1.14. Relative Density: 1.1 g/mL

9.1.15. Solubility(ies): Completely miscible.

9.1.16. Partition Coefficient: No data available.

9.1.17. Auto-ignition Temperature: No data available.

9.1.18. Decomposition Temperature: No data available.

9.1.19. Viscosity: No data available.

9.1.20. Explosive Properties: No data available.

9.1.21. Oxidizing Properties: No data available.

9.2. Other Information: None.

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity: None anticipated.

10.2. Chemical Stability: Stable under recommended storage conditions.

10.3. Possibility of Hazardous Reactions: No hazardous reactions known if used for its intended purpose.

10.4. Conditions to Avoid: Avoid heat, flames, sparks, or other means of ignition.

10.5. Incompatible Materials: Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents.

10.6. Hazardous Decomposition Products: Carbon and sulfur oxides under fire conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects:

11.1.1. Acute Toxicity – Ingestion: Dimethyl sulfoxide, LD50, 28,300 mg/kg (rat)

11.1.2. Acute Toxicity – Skin Contact: Dimethyl sulfoxide, LD50, 40,000 mg/kg (rat)

11.1.3. Acute Toxicity – Inhalation: Dimethyl sulfoxide, LD50, 5.33 mg/L, 4 hr (rat)

11.1.4. Skin Corrosion/irritation: Calculation method (Rabbit, OECD Test Guideline 404): Causes slight irritation (4 hr).

11.1.5. Serious Eye Damage Irritation:

Calculation method (Rabbit, OECD Test Guideline 405): Causes slight irritation (24 hr).

11.1.6. Skin Sensitization Data: Not classified.

11.1.7. Respiratory Sensitization Data: Not classified.

11.1.8. Germ Cell Mutagenicity: Not classified.

11.1.9. Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

11.1.10. Reproductive Toxicity: Not classified.

11.1.11. Lactation: Not classified.

11.1.12. Specific Target Organ Toxicity - Single Exposure: Not classified.

11.1.13. Specific Target Organ Toxicity - Repeated Exposure: Not classified.

11.1.14. Aspiration Hazard: Not classified.

11.2. Additional Information: None.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity (Aquatic and Terrestrial, Where Available):

Toxicity to fish

LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 h

LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 24,600 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae

EC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 h (OECD Test Guideline 201)

12.2. Persistence and Degradation:

Aerobic - Exposure time 28 d

Result: 31 % - Not readily biodegradable. (OECD Test Guideline 301D)

12.3. Bioaccumulative potential:

No data available.

12.4. Mobility in Soil:

No data available.

12.5. Other Adverse Effects:

No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods: Remove waste in accordance with local and/or national regulations. Offer surplus and non-recyclable solutions to a licensed disposal company.

13.2. To minimize exposure, refer to Section 8 (Exposure Controls/Personal Protection) of the SDS.

SECTION 14. TRANSPORT INFORMATION

14.1. UN Number: None

14.2. UN Proper Shipping Name: Combustible liquid, n.o.s. (Dimethyl sulfoxide)

14.3. Transport Hazard Class(es): None

14.4. Packing Group, If Applicable: None

14.5. Environmental Hazards: Not classified as a marine pollutant.

14.6. Guidance on Transport in Bulk (According to Annex II of MARPOL 73/783 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code)): None.

14.7. Other Special Precautions Related to Transport: None.

SECTION 15. REGULATORY INFORMATION

15.1. Safety, Health and Environmental Regulations Specific for the Product in Question:

SARA 302/313 Components

SARA 302: This material is not subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire hazard. Chronic health hazard.

California Prop. 65 Components

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

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain HAPs.

WHMIS Hazard Class

B3 Flammable and combustible material, combustible liquid

SECTION 16. OTHER INFORMATION

16.1. Revision Date: 18 June 2020

16.2. Reason for Revision: Change in address of supplier.

16.3. Additional Information: None.

Disclaimer: Mirus Bio LLC believes that the information on this SDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, Mirus Bio LLC does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling.

Section 1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier:

1.1.1. Product Name: 10X Labeling Buffer A

1.1.2. Product Code: Part of MIR 3100, 3125, 3200, 3225, 3300, 3325, 3400, 3425, 3600, 3625, 3700, 3725, 3800, 3825, 3900, 3925, 4100, 4125, 7100, 7125, 7212, 7213, 7214, 7215, 7216, 7217, 7020, 7021, 7022, 7023, 7024, and 7025

1.1.3. CAS No.: Not applicable.

1.2. Relevant Identified Uses of the Mixture and Uses Advised Against:

1.2.1. Identified Uses: For research use only.

1.2.2. Uses Advised Against: Not known.

1.3. Details of the Supplier of the SDS:

1.3.1. Company: Mirus Bio LLC

1.3.2. Address: 5602 Research Park Blvd, Suite 210, Madison, WI 53719, USA

1.3.3. Telephone No.: 888.530.0801 (Toll Free within the U.S.) or +1.608.441.2852

1.3.4. Fax: +1.608.441.2849

1.3.5. Email: info@mirusbio.com

1.4. Emergency Telephone No.:

1.4.1. US and Canada: +1.800.633.8253

1.4.2. International: +1.801.629.0667

Section 2. HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture:

US CFR 1910.1200

This substance or mixture is not considered hazardous.

2.2. Label Elements:

2.2.1. Product Name: 10X Labeling Buffer A

2.2.2. Hazard Pictogram(s): Not applicable.

2.2.3. Signal Word(s): Not applicable.

2.2.4. Hazard Statement(s): Not applicable.

2.2.5. Precautionary Statement(s): Not applicable.

2.3. Other Hazards:

Not applicable.

2.4. Additional Information:

None.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances:

Not applicable.

3.2. Mixtures:

This mixture contains no ingredients at their given concentration considered to be hazardous to health.

Section 4. FIRST AID MEASURES

4.1. Description of First Aid Measures:

4.1.1. Inhalation: Treat symptomatically.

4.1.2. Skin Contact: Take off all contaminated clothing immediately. Rinse skin with water.

4.1.3. Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a poison center and/or doctor.

4.1.4. Ingestion: Rinse mouth with water. Treat symptomatically.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed:

No information available.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed:

Call a poison center and/or doctor. Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing Media:

5.1.1. Suitable Extinguishing Media:

Use extinguishing media that is appropriate to local circumstances and environment.

5.1.2. Unsuitable Extinguishing Media:

No information available.

5.2. Specific Hazards Arising from the Mixture:

None known.

5.3. Advice for Firefighters:

Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures:

Provide adequate ventilation. Wear suitable protective clothing, gloves and eye/face protection.

6.2. Environmental Precautions:

This material and its container must be disposed of in a safe way.

6.3. Methods and Materials for Containment and Cleaning Up:

Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for Safe Handling:

Handle in accordance with good industrial hygiene and safety practices. Wear protective gloves and eye/face protection.

7.2. Conditions for Safe Storage, Including Any Incompatibilities:

Store tightly closed in a well-ventilated place. Keep cool.

7.2.1. Storage Temperature: -20°C.

7.2.2. Storage Life: Stable under normal conditions.

7.3. Specific End Use(s):

For research use only.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters:

8.1.1. **Occupational Exposure Limits:** Not applicable.

8.2. Exposure Controls:

8.2.1. Appropriate Engineering Controls:

Ensure adequate ventilation. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2. Personal Protective Equipment:

8.2.2.1. **Eye Protection:** Tightly fitting safety glasses with side shields.

8.2.2.2. **Skin Protection:** Protective clothing and gloves.

8.2.2.3. **Respiratory Protection:** Normally no personal respiratory protection is necessary.

8.2.2.4. **Thermal Hazards:** None known.

8.3. Environmental Exposure Controls:

Avoid release to the environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties:

9.1.1. **Appearance** Liquid

Color: colorless.

9.1.2. **Odor:** No data available.

9.1.3. **Odor Threshold:** No data available.

9.1.4. **pH:** No data available.

9.1.5. **Melting Point/freezing Point:** No data available.

9.1.6. **Initial Boiling Point and Boiling Range:** No data available.

9.1.7. **Flash Point:** No data available.

9.1.8. **Evaporation Rate:** No data available.

9.1.9. **Flammability (Solid, Gas):** No data available.

9.1.10. **Upper/lower Flammability or Explosive Limits:**

Upper explosion limit: No data available.

Lower explosion limit: No data available.

9.1.11. **Vapor Pressure:** No data available.

9.1.12. **Vapor Density:** No data available.

9.1.13. **Density:** No data available.

9.1.14. **Relative Density:** No data available.

9.1.15. **Solubility(ies):** Completely miscible, alcohol soluble, diethylether soluble.

9.1.16. **Partition Coefficient:** No data available.

9.1.17. **Auto-ignition Temperature:** No data available.

9.1.18. **Decomposition Temperature:** No data available.

9.1.19. **Viscosity:** No data available.

9.1.20. **Explosive Properties:** No data available.

9.1.21. **Oxidizing Properties:** No data available.

9.2. Other Information: None.

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity: None anticipated.

10.2. Chemical Stability: Stable under recommended storage conditions.

10.3. Possibility of Hazardous Reactions: No hazardous reactions known if used for its intended purpose.

10.4. Conditions to Avoid: None known.

10.5. Incompatible Materials: No data available.

10.6. Hazardous Decomposition Products: No data available.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects:

- 11.1.1. **Acute Toxicity – Ingestion:** Not classified.
- 11.1.2. **Acute Toxicity – Skin Contact:** Not classified.
- 11.1.3. **Acute Toxicity – Inhalation:** Not classified.
- 11.1.4. **Skin Corrosion/irritation:** Not classified.
- 11.1.5. **Serious Eye Damage Irritation:** Not classified.
- 11.1.6. **Skin Sensitization Data:** Not classified.
- 11.1.7. **Respiratory Sensitization Data:** Not classified.
- 11.1.8. **Germ Cell Mutagenicity:** Not classified.

11.1.9. **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

- 11.1.10. **Reproductive Toxicity:** Not classified.
- 11.1.11. **Lactation:** Not classified.
- 11.1.12. **Specific Target Organ Toxicity - Single Exposure:** Not classified.
- 11.1.13. **Specific Target Organ Toxicity - Repeated Exposure:** Not classified.
- 11.1.14. **Aspiration Hazard:** Not classified.

11.2. Additional Information: None.

SECTION 12. ECOLOGICAL INFORMATION

- 12.1. **Ecotoxicity (Aquatic and Terrestrial, Where Available):** No data available.
- 12.2. **Persistence and Degradation:** No data available.
- 12.3. **Bioaccumulative potential:** No data available.
- 12.4. **Mobility in Soil:** No data available.
- 12.5. **Other Adverse Effects:** No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

- 13.1. **Waste Treatment Methods:** Remove waste in accordance with local and/or national regulations. Offer surplus and non-recyclable solutions to a licensed disposal company.
- 13.2. To minimize exposure, refer to Section 8 (Exposure Controls/Personal Protection) of the SDS.

SECTION 14. TRANSPORT INFORMATION

- 14.1. **UN Number:** Not regulated.
- 14.2. **UN Proper Shipping Name:** Not regulated.
- 14.3. **Transport Hazard Class(es):** Not regulated.
- 14.4. **Packing Group, If Applicable:** Not regulated.

- 14.5. Environmental Hazards:** Not classified as a marine pollutant.
- 14.6. Guidance on Transport in Bulk (According to Annex II of MARPOL 73/783 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code)):** None.
- 14.7. Other Special Precautions Related to Transport:** None.

SECTION 15. REGULATORY INFORMATION

- 15.1. Safety, Health and Environmental Regulations Specific for the Product in Question:**
SARA 302/313 Components

SARA 302: This material is not subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

- SARA 311/312 Hazards**

None.

- California Prop. 65 Components**

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

- Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product does not contain HAPs.

- WHMIS Hazard Class**

Non-controlled. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

SECTION 16. OTHER INFORMATION

- 16.1. Revision Date:** 18 June 2020
- 16.2. Reason for Revision:** Change in address of supplier.
- 16.3. Additional Information:** None.

Disclaimer: Mirus Bio LLC believes that the information on this SDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, Mirus Bio LLC does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling.

Section 1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier:

1.1.1. Product Name: Denaturation Buffer D1

1.1.2. Product Code: Part of MIR 3100, 3125, 3200, 3225, 3300, 3325, 3400, 3425, 3600, 3625, 3700, 3725, 3800, 3825, 3900, 3925, 4100, 4125, 7100, and 7125

1.1.3. CAS No.: Not applicable.

1.2. Relevant Identified Uses of the Mixture and Uses Advised Against:

1.2.1. Identified Uses: For research use only.

1.2.2. Uses Advised Against: Not known.

1.3. Details of the Supplier of the SDS:

1.3.1. Company: Mirus Bio LLC

1.3.2. Address: 5602 Research Park Blvd, Suite 210, Madison, WI 53719, USA

1.3.3. Telephone No.: 888.530.0801 (Toll Free within the U.S.) or +1.608.441.2852

1.3.4. Fax: +1.608.441.2849

1.3.5. Email: info@mirusbio.com

1.4. Emergency Telephone No.:

1.4.1. US and Canada: +1.800.633.8253

1.4.2. International: +1.801.629.0667

Section 2. HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture:

US CFR 1910.1200

Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318

2.2. Label Elements:

2.2.1. Product Name:

Denaturation Buffer D1



2.2.2. Hazard Pictogram(s):

Danger

2.2.3. Signal Word(s):

H314+318: Causes severe skin burns and eye damage.

2.2.4. Hazard Statement(s):

P260: Do not breathe mist, spray, and vapors.

P264: Wash exposed skin thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353: IF ON SKIN or HAIR: Remove immediately all contaminated clothing. Rinse skin with water/shower.

2.2.5. Precautionary Statement(s):

P304+P340: IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P305+P351+P338: If IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310: Immediately call a POISON CENTER or doctor/physician.
 P363: Wash contaminated clothing before reuse.
 P501: Dispose of contents/container to comply with local, state and federal regulations.

2.3. Other Hazards: None known.

2.4. Additional Information: None.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances:

Not applicable.

3.2. Mixtures:

Hazardous Ingredient(s)	CAS No.	%W/V	Hazard Statement(s)	Hazard Pictogram(s)
Sodium hydroxide	1310-73-2	12	Skin Corrosion 1A H314 Serious Eye Dam. 1 H318	GHS05

Section 4. FIRST AID MEASURES

4.1. Description of First Aid Measures:

4.1.1. Inhalation: Treat symptomatically.

4.1.2. Skin Contact: Take off all contaminated clothing immediately. Rinse skin with water.

4.1.3. Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a poison center and/or doctor.

4.1.4. Ingestion: Rinse mouth with water. Treat symptomatically.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed:

Causes skin burns, eye damage and irritation of the respiratory tract if directly contacting skin/eyes or ingested.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed:

Immediately call a POISON CENTER or physician. Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing Media:

5.1.1. Suitable Extinguishing Media:

Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.1.2. Unsuitable Extinguishing Media:

None known.

5.2. Specific Hazards Arising from the Mixture:

Sodium oxides.

5.3. Advice for Firefighters:

Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, Protective Equipment and Emergency Procedures:**

Provide adequate ventilation. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Wear suitable protective clothing, gloves and eye/face protection.

6.2. Environmental Precautions:

This material and its container must be disposed of in a safe way.

6.3. Methods and Materials for Containment and Cleaning Up:

Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Containers must not be punctured or destroyed by burning, even when empty.

SECTION 7. HANDLING AND STORAGE**7.1. Precautions for Safe Handling:**

Avoid inhalation of vapor or mist. Avoid contact with skin and eyes. Wear protective gloves/protective clothing/eye protection/face protection.

7.2. Conditions for Safe Storage, Including Any Incompatibilities:

Keep container tightly closed in a dry and well-ventilated place.

7.2.1. Storage Temperature: -20°C.

7.2.2. Storage Life: Stable under normal conditions.

7.3. Specific End Use(s): For research use only.**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control Parameters:****8.1.1. Occupational Exposure Limits:**

Sodium hydroxide (1310-73-2)		
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2 mg/m ³

8.2. Exposure Controls:**8.2.1. Appropriate Engineering Controls:**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

8.2.2. Personal Protective Equipment:

8.2.2.1. Eye Protection: Tightly fitting safety glasses with side shields.

8.2.2.2. Skin Protection: Protective clothing and gloves.

8.2.2.3. Respiratory Protection: Normally no personal respiratory protection is necessary.

8.2.2.4. Thermal Hazards: None known.

8.3. Environmental Exposure Controls:

Avoid release to the environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties:

9.1.1. Appearance Liquid
 Color: colorless.

9.1.2. Odor: No data available.

9.1.3. Odor Threshold: No data available.

9.1.4. pH: No data available.

9.1.5. Melting Point/freezing Point: No data available.

9.1.6. Initial Boiling Point and Boiling Range: No data available.

9.1.7. Flash Point: No data available.

9.1.8. Evaporation Rate: No data available.

9.1.9. Flammability (Solid, Gas): No data available.

9.1.10. Upper/lower Flammability or Explosive Limits:

Upper explosion limit: No data available.

Lower explosion limit: No data available.

9.1.11. Vapor Pressure: No data available.

9.1.12. Vapor Density: No data available.

9.1.13. Density: No data available.

9.1.14. Relative Density: No data available.

9.1.15. Solubility(ies): No data available.

9.1.16. Partition Coefficient: No data available.

9.1.17. Auto-ignition Temperature: No data available.

9.1.18. Decomposition Temperature: No data available.

9.1.19. Viscosity: No data available.

9.1.20. Explosive Properties: No data available.

9.1.21. Oxidizing Properties: No data available.

9.2. Other Information:

None.

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity: None anticipated.

10.2. Chemical Stability: Stable under recommended storage conditions.

10.3. Possibility of Hazardous Reactions: No hazardous reactions known if used for its intended purpose.

10.4. Conditions to Avoid: Avoid heat, flames, sparks, or other means of ignition.

10.5. Incompatible Materials: Strong acids, strong oxidizing agents, organic materials.

10.6. Hazardous Decomposition Products: Sodium oxides under fire conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects:

11.1.1. Acute Toxicity – Ingestion: No data available.

11.1.2. Acute Toxicity – Skin Contact: No data available.

11.1.3. Acute Toxicity – Inhalation: No data available.

11.1.4. Skin Corrosion/irritation: Calculation method (Rabbit, OECD Test Guideline 404): Causes slight irritation (4 hr).

11.1.5. Serious Eye Damage Irritation:

Calculation method (Rabbit, OECD Test Guideline 405): Causes slight irritation (24 hr).

11.1.6. Skin Sensitization Data: Not classified.

11.1.7. Respiratory Sensitization Data: Not classified.

11.1.8. Germ Cell Mutagenicity: Not classified.

11.1.9. Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

11.1.10. Reproductive Toxicity: Not classified.

11.1.11. Lactation: Not classified.

11.1.12. Specific Target Organ Toxicity - Single Exposure: Not classified.

11.1.13. Specific Target Organ Toxicity - Repeated Exposure: Not classified.

11.1.14. Aspiration Hazard: Not classified.

11.2. Additional Information: None.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity (Aquatic and Terrestrial, Where Available):

Toxicity to fish

LC50 - *Salmo gairdneri* – 45.4 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - *Ceriodaphnia* sp. – 40.4 mg/l - 48 h

12.2. Persistence and Degradation: No data available.

12.3. Bioaccumulative potential: No data available.

12.4. Mobility in Soil: No data available.

12.5. Other Adverse Effects: No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods: Remove waste in accordance with local and/or national regulations. Offer surplus and non-recyclable solutions to a licensed disposal company.

13.2. To minimize exposure, refer to Section 8 (Exposure Controls/Personal Protection) of the SDS.

SECTION 14. TRANSPORT INFORMATION

14.1. UN Number: 1824

14.2. UN Proper Shipping Name: Sodium hydroxide solution

14.3. Transport Hazard Class(es): 8

14.4. Packing Group, If Applicable: II

14.5. Environmental Hazards: Not classified as a marine pollutant.

14.6. Guidance on Transport in Bulk (According to Annex II of MARPOL 73/783 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code)): None.

14.7. Other Special Precautions Related to Transport: None.

SECTION 15. REGULATORY INFORMATION

15.1. Safety, Health and Environmental Regulations Specific for the Product in Question:

SARA 302/313 Components

SARA 302: This material is not subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire hazard. Chronic health hazard.

California Prop. 65 Components

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

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain HAPs.

WHMIS Hazard Class

B3 Flammable and combustible material, combustible liquid

SECTION 16. OTHER INFORMATION

16.1. Revision Date: 18 June 2020

16.2. Reason for Revision: Change in address of supplier.

16.3. Additional Information: None.

Disclaimer: Mirus Bio LLC believes that the information on this SDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, Mirus Bio LLC does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling.

Section 1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier:

1.1.1. Product Name: Neutralization Buffer N1

1.1.2. Product Code: Part of MIR 3100, 3125, 3200, 3225, 3300, 3325, 3400, 3425, 3600, 3625, 3700, 3725, 3800, 3825, 3900, 3925, 4100, 4125, 7100, and 7125

1.1.3. CAS No.: Not applicable.

1.2. Relevant Identified Uses of the Mixture and Uses Advised Against:

1.2.1. Identified Uses: For research use only.

1.2.2. Uses Advised Against: Not known.

1.3. Details of the Supplier of the SDS:

1.3.1. Company: Mirus Bio LLC

1.3.2. Address: 5602 Research Park Blvd, Suite 210, Madison, WI 53719, USA

1.3.3. Telephone No.: 888.530.0801 (Toll Free within the U.S.) or +1.608.441.2852

1.3.4. Fax: +1.608.441.2849

1.3.5. Email: info@mirusbio.com

1.4. Emergency Telephone No.:

1.4.1. US and Canada: +1.800.633.8253

1.4.2. International: +1.801.629.0667

Section 2. HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture:

US CFR 1910.1200

Corrosive to metals (Category 1), H290
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Specific target organ toxicity - single exposure (Category 3),
Respiratory system, H335

2.2. Label Elements:

2.2.1. Product Name: Neutralization Buffer N1



2.2.2. Hazard Pictogram(s):

Danger.

2.2.3. Signal Word(s):

H290: May be corrosive to metals.

2.2.4. Hazard Statement(s):

H314: Causes severe skin burns and eye damage.

2.2.5. Precautionary Statement(s):

P234: Keep only in original container.

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P264: Wash skin thoroughly after handling.

P271: Use in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P310: Immediately call a POISON CENTER or doctor/ physician.
 P363: Wash contaminated clothing before reuse.
 P390: Absorb spillage to prevent material damage.
 P501: Dispose of contents/container to an approved waste disposal plant.
 P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P303+P353+P361: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower.
 P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P305+P338+P351: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P233+403: Store in a well-ventilated place. Keep container tightly closed.

2.3. Other Hazards: Not applicable.

2.4. Additional Information: None.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances:

Not applicable.

3.2. Mixtures:

Hazardous Ingredient(s)	CAS No.	%W/V	Hazard Statement(s)	Hazard Pictogram(s)
Hydrochloric acid	7647-01-0	11	Corrosive to Metals 1 H290 Burns, Eye Dam. 1B H314 Eye Dam. 1 H318 STOT SE 3 H335	GHS 05

Section 4. FIRST AID MEASURES

4.1. Description of First Aid Measures:

4.1.1. Inhalation: Treat symptomatically.

4.1.2. Skin Contact: Take off all contaminated clothing immediately. Rinse skin with water.

4.1.3. Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a poison center and/or doctor.

4.1.4. Ingestion: Rinse mouth with water. Treat symptomatically.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed:

Causes severe skin burns and eye damage if contacted directly. May cause nausea and vomiting if ingested.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed:

Call a poison center and/or doctor. Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing Media:**5.1.1. Suitable Extinguishing Media:**

Use extinguishing media that is appropriate to local circumstances and environment.

5.1.2. Unsuitable Extinguishing Media:

Do not use a heavy water stream.

5.2. Specific Hazards Arising from the Mixture:

Corrosive vapors.

5.3. Advice for Firefighters:

Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, Protective Equipment and Emergency Procedures:**

Provide adequate ventilation. Wear suitable protective clothing, gloves and eye/face protection.

6.2. Environmental Precautions:

This material and its container must be disposed of in a safe way.

6.3. Methods and Materials for Containment and Cleaning Up:

Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal.

SECTION 7. HANDLING AND STORAGE**7.1. Precautions for Safe Handling:**

Handle in accordance with good industrial hygiene and safety practices. Wear protective gloves and eye/face protection.

7.2. Conditions for Safe Storage, Including Any Incompatibilities:

Store tightly closed in a well-ventilated place. Keep cool. Do not mix with metals, strong acids, or strong bases.

7.2.1. Storage Temperature: -20°C.**7.2.2. Storage Life:** Stable under normal conditions.**7.3. Specific End Use(s):** For research use only.**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control Parameters:****8.1.1. Occupational Exposure Limits:**

Hydrochloric acid (7647-01-0)		
USA OSHA	OSHA PEL (TWA) (mg/m ³)	7 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	5 ppm

8.2. Exposure Controls:**8.2.1. Appropriate Engineering Controls:**

Ensure adequate ventilation. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2. Personal Protective Equipment:

- 8.2.2.1. **Eye Protection:** Tightly fitting safety glasses with side shields.
- 8.2.2.2. **Skin Protection:** Protective clothing and gloves.
- 8.2.2.3. **Respiratory Protection:** Normally no personal respiratory protection is necessary.
- 8.2.2.4. **Thermal Hazards:** None known.

8.3. Environmental Exposure Controls:

Avoid release to the environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties:

9.1.1. **Appearance** Liquid
 Color: colorless.

9.1.2. **Odor:** No data available.

9.1.3. **Odor Threshold:** No data available.

9.1.4. **pH:** No data available.

9.1.5. **Melting Point/freezing Point:** No data available.

9.1.6. **Initial Boiling Point and Boiling Range:** No data available.

9.1.7. **Flash Point:** No data available.

9.1.8. **Evaporation Rate:** No data available.

9.1.9. **Flammability (Solid, Gas):** No data available.

9.1.10. **Upper/lower Flammability or Explosive Limits:**

Upper explosion limit: No data available.
Lower explosion limit: No data available.

9.1.11. **Vapor Pressure:** No data available.

9.1.12. **Vapor Density:** No data available.

9.1.13. **Density:** No data available.

9.1.14. **Relative Density:** No data available.

9.1.15. **Solubility(ies):** Water soluble.

9.1.16. **Partition Coefficient:** No data available.

9.1.17. **Auto-ignition Temperature:** No data available.

9.1.18. **Decomposition Temperature:** No data available.

9.1.19. **Viscosity:** No data available.

9.1.20. **Explosive Properties:** No data available.

9.1.21. **Oxidizing Properties:** No data available.

9.2. Other Information:

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity:

None anticipated.

10.2. Chemical Stability:

Stable under recommended storage conditions.

10.3. Possibility of Hazardous Reactions:

No hazardous reactions known if used for its intended purpose.

10.4. Conditions to Avoid:

None known.

10.5. Incompatible Materials:

Bases, amines, alkali metals, metals, permanganates, e.g. potassium permanganate, fluorine, metal acetylides, and hexolithium disilicide.

10.6. Hazardous Decomposition Products:

No data available.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects:

11.1.1. **Acute Toxicity – Ingestion:** Hydrochloric acid, LD50, 238-277 mg/kg (rat).

11.1.2. **Acute Toxicity – Skin Contact:** Hydrochloric acid, LD50, 5010 mg/kg (rabbit).

11.1.3. Acute Toxicity – Inhalation: Hydrochloric acid, LD50, 1.68 mg/L, 1 hr (rat).

11.1.4. Skin Corrosion/irritation: corrosive and irritating.

11.1.5. Serious Eye Damage Irritation: can cause serious eye damage and irritation.

11.1.6. Skin Sensitization Data: Not classified.

11.1.7. Respiratory Sensitization Data: Not classified.

11.1.8. Germ Cell Mutagenicity: Not classified.

11.1.9. Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

11.1.10. Reproductive Toxicity: Not classified.

11.1.11. Lactation: Not classified.

11.1.12. Specific Target Organ Toxicity - Single Exposure: Not classified.

11.1.13. Specific Target Organ Toxicity - Repeated Exposure: Not classified.

11.1.14. Aspiration Hazard: Not classified.

11.2. Additional Information: None.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity (Aquatic and Terrestrial, Where Available):

Hydrochloric acid, LC50 - Fish – 282 mg/l - 96 h

Hydrochloric acid, EC50 - Daphnia magna (Water flea) - < 56 mg/l - 72 h

12.2. Persistence and Degradation: No data available.

12.3. Bioaccumulative potential: Hydrochloric acid: low potential (Log Kow < 4).

12.4. Mobility in Soil: No data available.

12.5. Other Adverse Effects: No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods: Remove waste in accordance with local and/or national regulations. Offer surplus and non-recyclable solutions to a licensed disposal company.

13.2. To minimize exposure, refer to Section 8 (Exposure Controls/Personal Protection) of the SDS.

SECTION 14. TRANSPORT INFORMATION

14.1. UN Number: 1789

14.2. UN Proper Shipping Name: Hydrochloric acid

14.3. Transport Hazard Class(es): 8

14.4. Packing Group, If Applicable: II

14.5. Environmental Hazards: Not classified as a marine pollutant.

14.6. Guidance on Transport in Bulk (According to Annex II of MARPOL 73/783 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code)): None.

14.7. Other Special Precautions Related to Transport: None.

SECTION 15. REGULATORY INFORMATION

15.1. Safety, Health and Environmental Regulations Specific for the Product in Question:

SARA 302/313 Components

SARA 302: Hydrochloric acid, 6% v/v, (302 TPQ: 500 lb, 304 RQ: 5000 lb).

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Immediate acute health hazards.

California Prop. 65 Components

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

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain HAPs.

WHMIS Hazard Class

Non-controlled. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

SECTION 16. OTHER INFORMATION

16.1. Revision Date: 13 Jul 2021

16.2. Reason for Revision: Corrected error in Section 3.2.

16.3. Additional Information: None.

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