

Material Safety Data Sheet (MSDS) for Senescence β -Galactosidase Staining Kit



Cell Signaling
TECHNOLOGY™

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I. Identification

Product name: Senescence β -Galactosidase Staining Kit

CAS number: N/A

II. Ingredients

10X Fixative Solution (15 ml): 20% formaldehyde (CAS number 50-00-0), 2% glutaraldehyde (CAS number 111-30-8), in 10X PBS

x-Gal (150 mg): 5-bromo-4-chloro-3-indolyl-beta-D-galactopyranoside powder (CAS number 7240-90-6)

10X Staining Solution (15 ml): 400 mM citric acid (CAS number 77-92-9)/sodium phosphate (CAS number 7558-79-4) (pH 6.0), 1.5 M NaCl (CAS number 7647-14-5), 20 mM MgCl (CAS number 7791-18-6)

100X Staining Solution Supplement A (1.5 ml): 500 mM potassium ferrocyanide (CAS number 14459-95-1)

100X Staining Solution Supplement B (1.5 ml): 500 mM potassium ferricyanide (CAS number 13746-66-2)

III. Physical Data

10X Fixative Solution and 10X Staining Solution:

Boiling point—N/A

Vapor pressure—N/A

Vapor density—N/A

Specific gravity—N/A

Melting point—N/A

Evaporation rate—N/A

Solubility in water—Solutions are dilutable

Appearance—Clear solutions

100X Staining Solution Supplement A and 100X Staining Solution Supplement B:

Boiling point—N/A

Vapor pressure—N/A

Vapor density—N/A

Specific gravity—N/A

Melting point—N/A

Evaporation rate—N/A

Solubility in water—Solutions are dilutable

Appearance—100X Staining Supplement A: Yellow solution
100X Staining Supplement B: Orange solution

x-Gal:

Molecular formula—C₁₄ H₁₅ Br Cl N O₆

Molecular weight—408.47

Melting point—230°C (decomposes)

Solubility in water—Soluble

Appearance—White powder

IV. Fire and Explosion Hazard Data

Extinguishing media: CO₂ or dry chemical should be used if any component of this kit is involved in a fire.

Special fire fighting procedures: If involved in fire, don NIOSH/MSHA approved self-contained breathing apparatus, flame/chemical resistant.

Unusual fire and explosion hazards: All components of this kit can emit toxic fumes under fire conditions.

V. Health Hazard Data

Threshold Limit Value (TLV) and source: To the best of our knowledge, the chemical, physical and toxicological properties of the components of this kit have not been thoroughly investigated.

Acute effects of overexposure: All components of this kit may be harmful. To the best of our knowledge, the chemical, physical and toxicological properties of the components of this kit have not been thoroughly investigated.

Swallowing: All components of this kit can be harmful if swallowed.

Skin absorption: All components of this kit can be harmful if absorbed through skin.

Inhalation: All components of this kit can be harmful if inhaled.

Skin contact: All components of this kit can be harmful if skin contact occurs.

Eye contact: All components of this kit can be harmful if eye contact occurs.

Chronic effects of overexposure: All components of this kit may be harmful. To the best of our knowledge, the chemical, physical and toxicological properties of the components of this kit have not been thoroughly investigated.

Emergency and First Aid Procedures:

Swallowing—If any component of the kit is swallowed, wash mouth out with water, provided person is conscious, and call a physician.

Skin—If any component of the kit contacts the skin, immediately wash skin with soap and copious amounts of water.

Inhalation—If any component of the kit is inhaled, remove person to fresh air. If not breathing, perform CPR and call a physician.

Eyes—If any component of the kit contacts the eyes, flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating eyelids with fingers. Consult a physician.

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VI. Reactivity Data

Stability/Conditions to avoid: All kit components are stable under normal temperatures and pressures. Avoid exposure of x-Gal to heat, light and moisture. Avoid exposure of 100X Staining Solution Supplement A and B to light.

Incompatibility/Materials to avoid: Contact with strong oxidizing agents should be avoided for all kit components. Contact with strong acids, strong bases and strong reducing agents should be avoided for 100X Staining Solution Supplement A and B.

Combustion/Decomposition Products:

10X Fixative Solution—Carbon monoxide, carbon dioxide

x-Gal—Carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen chloride gas, hydrogen bromide gas

10X Staining Solution—Carbon monoxide, carbon dioxide, sodium, sodium oxides, hydrogen chloride gas, magnesium oxides, phosphorus oxides

100X Staining Solution Supplement A—Hydrogen cyanide, nitrogen oxides, carbon monoxide, carbon dioxide

100X Staining Solution Supplement B—Cyanide fumes, oxides of potassium

Hazardous polymerization: To the best of our knowledge, the components of the kit are not susceptible to polymerization.

VII. Spill or Leak Procedures

Steps to be taken if 10X Fixative Solution, 10X Staining Solution, 100X Staining Solution Supplements A and/or B are spilled or released: Wear self-contained breathing apparatus, rubber boots and rubber gloves. Use Vermiculite or another suitable absorbent to clean up the spill, place in a suitable closed container for disposal, then wash down the spill site and ventilate the area.

Steps to be taken if x-Gal is spilled or released: Wear self-contained breathing apparatus, rubber boots and rubber gloves. Sweep up the spill site and place material in a suitable container for disposal. Wash down the spill site and ventilate the area when cleanup is complete.

Waste disposal method: Add waste to a combustible solvent and burn in an EPA-licensed chemical incinerator equipped with an afterburner and scrubber.

VIII. Special Protection Information

Respiratory protection: Avoid inhalation. Use NIOSH/MSHA-approved respirator.

Ventilation: Use mechanical exhaust.

Protective equipment: Wear suitable protective clothing, chemical resistant gloves and lab safety glasses.

IX. Special Precautions

Precautions to be taken in handling and storage: 10X Fixative Solution contains formaldehyde and glutaraldehyde. Formaldehyde is poisonous and can be absorbed through the skin. Glutaraldehyde is corrosive and carcinogenic and can also be absorbed through the skin. Potassium ferricyanide and potassium ferrocyanide are harmful by inhalation, skin contact and swallowing. A cyanide antidote kit should always be available when working with any cyanide compound. Wear gloves, goggles and lab coats and use necessary precaution when handling these solutions. Please dispose of all hazardous substances in accordance with federal, state and local regulations.

This kit is sold only for research use by personnel familiar with the toxicology of organic chemicals and who are well trained in good laboratory habits, such as avoiding spills, keeping hands clean at all times and not rubbing eyes with hands while working in the laboratory.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide for experienced personnel. Cell Signaling Technology, Inc., shall not be held liable for any damage resulting from the handling of or from contact with the above product. The burden of safe use of these materials rests entirely with the user.

Revised: June 2001