

SAFETY DATA SHEET



Agilent High Sensitivity Protein 250 Kit, Part Number 5067-1575

Section 1. Identification

1.1 Product identifier

Product name : Agilent High Sensitivity Protein 250 Kit, Part Number 5067-1575
Part No. (Chemical Kit) : 5067-1575
Part No. : Dimethyl sulfoxide Not available.
 Protein 250 Labeling Dye Not available.
 Protein 250 Destaining Solution Not available.
 Protein 250 Gel Matrix Not available.
 Protein 250 Sample Buffer Not available.
 Protein 250 Labeling Buffer Not available.
 Ethanolamine solution Not available.
 Protein 250 Ladder Not available.

Validation date : 3/8/2016

1.2 Relevant identified uses of the substance or mixture and uses advised against

Material uses : Analytical chemistry.
 Research and Development
 Dimethyl sulfoxide 1 x 0.1 ml
 Protein 250 Labeling Dye 1 x 0.018 mg
 Protein 250 Destaining Solution 1 x 0.150 ml
 Protein 250 Gel Matrix 1 x 0.6 ml
 Protein 250 Sample Buffer 3 x 0.1 ml
 Protein 250 Labeling Buffer 1 x 1 ml
 Ethanolamine solution 1 x 0.1 ml
 Protein 250 Ladder 1 x 0.018 ml

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
 5301 Stevens Creek Blvd
 Santa Clara, CA 95051, USA
 800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : Dimethyl sulfoxide This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 Protein 250 Labeling Dye This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 Protein 250 Destaining Solution While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
 Protein 250 Gel Matrix While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This

Section 2. Hazards identification

	SDS should be retained and available for employees and other users of this product.
Protein 250 Sample Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Protein 250 Labeling Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Ethanolamine solution	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Protein 250 Ladder	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

Dimethyl sulfoxide

H227	FLAMMABLE LIQUIDS - Category 4
H320	EYE IRRITATION - Category 2B

Protein 250 Labeling Dye

H318	SERIOUS EYE DAMAGE - Category 1
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Protein 250 Ladder

H320	EYE IRRITATION - Category 2B
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Ingredients of unknown toxicity

Dimethyl sulfoxide	Not applicable.
Protein 250 Labeling Dye	Not applicable.
Protein 250 Destaining Solution	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 4.5%
Protein 250 Gel Matrix	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 12.1%
Protein 250 Sample Buffer	Not applicable.
Protein 250 Labeling Buffer	Not applicable.
Ethanolamine solution	Not applicable.
Protein 250 Ladder	Not applicable.

2.2 GHS label elements

Hazard pictograms



Signal word

Dimethyl sulfoxide	Warning
Protein 250 Labeling Dye	Danger
Protein 250 Destaining Solution	No signal word.
Protein 250 Gel Matrix	No signal word.
Protein 250 Sample Buffer	No signal word.
Protein 250 Labeling Buffer	No signal word.
Ethanolamine solution	No signal word.

Section 2. Hazards identification

Hazard statements	Protein 250 Ladder : Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Warning H227 - Combustible liquid. H320 - Causes eye irritation. GHS SYMBOL - Corrosion - H318 - Causes serious eye damage. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. H320 - Causes eye irritation.
Precautionary statements		
Prevention	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from flames and hot surfaces. - No smoking. P264 - Wash hands thoroughly after handling. P280 - Wear eye or face protection. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. P264 - Wash hands thoroughly after handling.
Response	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
Storage	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	P403 - Store in a well-ventilated place. P235 - Keep cool. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	:	

Section 2. Hazards identification

	☑ Dimethyl sulfoxide	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Protein 250 Labeling Dye	Not applicable.
	Protein 250 Destaining Solution	Not applicable.
	Protein 250 Gel Matrix	Not applicable.
	Protein 250 Sample Buffer	Not applicable.
	Protein 250 Labeling Buffer	Not applicable.
	Ethanolamine solution	Not applicable.
	Protein 250 Ladder	Not applicable.
Supplemental label elements	: ☑ Dimethyl sulfoxide	None known.
	Protein 250 Labeling Dye	None known.
	Protein 250 Destaining Solution	None known.
	Protein 250 Gel Matrix	None known.
	Protein 250 Sample Buffer	None known.
	Protein 250 Labeling Buffer	None known.
	Ethanolamine solution	None known.
	Protein 250 Ladder	None known.

2.3 Other hazards

Hazards not otherwise classified

: ☑ Dimethyl sulfoxide	None known.
Protein 250 Labeling Dye	None known.
Protein 250 Destaining Solution	None known.
Protein 250 Gel Matrix	None known.
Protein 250 Sample Buffer	None known.
Protein 250 Labeling Buffer	None known.
Ethanolamine solution	None known.
Protein 250 Ladder	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: ☑ Dimethyl sulfoxide	Substance
	Protein 250 Labeling Dye	Substance
	Protein 250 Destaining Solution	Mixture
	Protein 250 Gel Matrix	Mixture
	Protein 250 Sample Buffer	Mixture
	Protein 250 Labeling Buffer	Mixture
	Ethanolamine solution	Mixture
	Protein 250 Ladder	Mixture

Ingredient name	%	CAS number
☑ Dimethyl sulfoxide Dimethyl sulfoxide	≥90	67-68-5
Protein 250 Labeling Dye 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propen-1-yl]-3-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, sodium salt (1:1)	100	704891-70-3
Protein 250 Destaining Solution Trometamol	≤5	77-86-1
Sodium dodecyl sulphate	≤2	151-21-3
Protein 250 Gel Matrix Trometamol	≤5	77-86-1
Sodium dodecyl sulphate	≤2	151-21-3
Protein 250 Labeling Buffer		

Section 3. Composition/information on ingredients

Trometamol	≤5	77-86-1
Protein 250 Ladder		
Glycerol	≥10 - ≤25	56-81-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact

: Dimethyl sulfoxide

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.

Protein 250 Labeling Dye

Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Protein 250 Destaining Solution

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Protein 250 Gel Matrix

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Protein 250 Sample Buffer

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Protein 250 Labeling Buffer

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Ethanolamine solution

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Protein 250 Ladder

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.

Inhalation

: Dimethyl sulfoxide

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are

Section 4. First aid measures

Protein 250 Labeling Dye	<p>severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p> <p>Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</p>
Protein 250 Destaining Solution	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</p>
Protein 250 Gel Matrix	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</p>
Protein 250 Sample Buffer	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</p>
Protein 250 Labeling Buffer	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</p>
Ethanolamine solution	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</p>
Protein 250 Ladder	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain</p>

Section 4. First aid measures

Skin contact

: Dimethyl sulfoxide

Protein 250 Labeling Dye

an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Protein 250 Destaining Solution

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Protein 250 Gel Matrix

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Protein 250 Sample Buffer

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Protein 250 Labeling Buffer

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ethanolamine solution

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Protein 250 Ladder

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Dimethyl sulfoxide

Protein 250 Labeling Dye

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels

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Protein 250 Destaining Solution	sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protein 250 Gel Matrix	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protein 250 Sample Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protein 250 Labeling Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Ethanolamine solution	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protein 250 Ladder	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open

Section 4. First aid measures

airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Causes eye irritation. Causes serious eye damage. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Causes eye irritation.
Inhalation	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Adverse symptoms may include the following: irritation watering redness Adverse symptoms may include the following: pain watering redness No specific data. No specific data. No specific data. No specific data. No specific data. Adverse symptoms may include the following: irritation watering redness
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Inhalation	:	Dimethyl sulfoxide	No specific data.
		Protein 250 Labeling Dye	No specific data.
		Protein 250 Destaining Solution	No specific data.
		Protein 250 Gel Matrix	No specific data.
		Protein 250 Sample Buffer	No specific data.
		Protein 250 Labeling Buffer	No specific data.
		Ethanolamine solution	No specific data.
Skin contact	:	Dimethyl sulfoxide	No specific data.
		Protein 250 Labeling Dye	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		Protein 250 Destaining Solution	No specific data.
		Protein 250 Gel Matrix	No specific data.
		Protein 250 Sample Buffer	No specific data.
		Protein 250 Labeling Buffer	No specific data.
		Ethanolamine solution	No specific data.
Ingestion	:	Dimethyl sulfoxide	No specific data.
		Protein 250 Labeling Dye	Adverse symptoms may include the following: stomach pains
		Protein 250 Destaining Solution	No specific data.
		Protein 250 Gel Matrix	No specific data.
		Protein 250 Sample Buffer	No specific data.
		Protein 250 Labeling Buffer	No specific data.
		Ethanolamine solution	No specific data.
	Protein 250 Ladder	No specific data.	

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	:	Dimethyl sulfoxide	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Protein 250 Labeling Dye	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		Protein 250 Destaining Solution	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		Protein 250 Gel Matrix	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		Protein 250 Sample Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Protein 250 Labeling Buffer	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		Ethanolamine solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Protein 250 Ladder	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 4. First aid measures

Specific treatments	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment.
Protection of first-aiders	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Use dry chemical, CO ₂ , water spray (fog) or foam. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
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Section 5. Fire-fighting measures

Unsuitable extinguishing media	: Dimethyl sulfoxide	Do not use water jet.
	Protein 250 Labeling Dye	None known.
	Protein 250 Destaining Solution	None known.
	Protein 250 Gel Matrix	None known.
	Protein 250 Sample Buffer	None known.
	Protein 250 Labeling Buffer	None known.
	Ethanolamine solution	None known.
	Protein 250 Ladder	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: Dimethyl sulfoxide	Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
	Protein 250 Labeling Dye	No specific fire or explosion hazard.
	Protein 250 Destaining Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
	Protein 250 Gel Matrix	In a fire or if heated, a pressure increase will occur and the container may burst.
	Protein 250 Sample Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	Protein 250 Labeling Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	Ethanolamine solution	In a fire or if heated, a pressure increase will occur and the container may burst.
	Protein 250 Ladder	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: Dimethyl sulfoxide	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	Protein 250 Labeling Dye	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
	Protein 250 Destaining Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
	Protein 250 Gel Matrix	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
	Protein 250 Sample Buffer	No specific data.

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Protein 250 Labeling Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
Ethanolamine solution Protein 250 Ladder	No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters

: Dimethyl sulfoxide	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Protein 250 Labeling Dye	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Protein 250 Destaining Solution	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Protein 250 Gel Matrix	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Protein 250 Sample Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Protein 250 Labeling Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Ethanolamine solution	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Protein 250 Ladder	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

: Dimethyl sulfoxide	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Protein 250 Labeling Dye	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Protein 250 Destaining Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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Protein 250 Gel Matrix	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Protein 250 Sample Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Protein 250 Labeling Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Ethanolamine solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Protein 250 Ladder	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: Dimethyl sulfoxide

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on

Protein 250 Labeling Dye

Protein 250 Destaining Solution

Protein 250 Gel Matrix

Protein 250 Sample Buffer

Section 6. Accidental release measures

Protein 250 Labeling Buffer	appropriate personal protective equipment. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
Ethanolamine solution	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
Protein 250 Ladder	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders : Dimethyl sulfoxide	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Protein 250 Labeling Dye	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Protein 250 Destaining Solution	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Protein 250 Gel Matrix	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Protein 250 Sample Buffer	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Protein 250 Labeling Buffer	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Ethanolamine solution	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Protein 250 Ladder	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

6.2 Environmental precautions

: Dimethyl sulfoxide

Protein 250 Labeling Dye	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Protein 250 Destaining Solution	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Protein 250 Gel Matrix	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Protein 250 Sample Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Protein 250 Labeling Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Ethanolamine solution	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Protein 250 Ladder	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up

: Dimethyl sulfoxide

Protein 250 Labeling Dye	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Protein 250 Destaining Solution	Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste

Section 6. Accidental release measures

Protein 250 Gel Matrix	disposal container. Dispose of via a licensed waste disposal contractor. Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Protein 250 Sample Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Protein 250 Labeling Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Ethanolamine solution	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Protein 250 Ladder	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures :  Dimethyl sulfoxide

Protein 250 Labeling Dye	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container. Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible
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Section 7. Handling and storage

material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Protein 250 Destaining Solution	Put on appropriate personal protective equipment (see Section 8).
Protein 250 Gel Matrix	Put on appropriate personal protective equipment (see Section 8).
Protein 250 Sample Buffer	Put on appropriate personal protective equipment (see Section 8).
Protein 250 Labeling Buffer	Put on appropriate personal protective equipment (see Section 8).
Ethanolamine solution	Put on appropriate personal protective equipment (see Section 8).
Protein 250 Ladder	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

:  Dimethyl sulfoxide

Protein 250 Labeling Dye	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Protein 250 Destaining Solution	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Protein 250 Gel Matrix	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Protein 250 Sample Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Protein 250 Labeling Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face

Section 7. Handling and storage

Ethanolamine solution

Protein 250 Ladder

before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

: Dimethyl sulfoxide

Protein 250 Labeling Dye

Protein 250 Destaining Solution

Protein 250 Gel Matrix

Storage temperature: -20°C (-4°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Storage temperature: -20°C (-4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Storage temperature: -20°C (-4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Storage temperature: -20°C (-4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food

Section 7. Handling and storage

Protein 250 Sample Buffer	and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Storage temperature: -20°C (-4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Protein 250 Labeling Buffer	Storage temperature: -20°C (-4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Ethanolamine solution	Storage temperature: -20°C (-4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Protein 250 Ladder	Storage temperature: -20°C (-4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

[7.3 Specific end use\(s\)](#)

Section 7. Handling and storage

Recommendations	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Dimethyl sulfoxide Dimethyl sulfoxide	AIHA WEEL (United States, 10/2011). TWA: 250 ppm 8 hours.
Protein 250 Labeling Dye 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propen-1-yl]-3-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, sodium salt (1:1)	None.
Protein 250 Destaining Solution Trometamol Sodium dodecyl sulphate	None. None.
Protein 250 Gel Matrix Trometamol Sodium dodecyl sulphate	None. None.
Protein 250 Labeling Buffer Trometamol	None.
Protein 250 Ladder Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust

8.2 Exposure controls

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	Dimethyl sulfoxide	Liquid. [Clear.]
		Protein 250 Labeling Dye	Solid. [lyophilised]
		Protein 250 Destaining Solution	Liquid.
		Protein 250 Gel Matrix	Liquid.
		Protein 250 Sample Buffer	Liquid.
		Protein 250 Labeling Buffer	Liquid.
		Ethanolamine solution	Liquid.
		Protein 250 Ladder	Liquid.

Section 9. Physical and chemical properties

Color	: Dimethyl sulfoxide	Colorless.
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
Odor	: Dimethyl sulfoxide	Odorless. [Slight]
	Protein 250 Labeling Dye	Odorless.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
Odor threshold	: Dimethyl sulfoxide	Not available.
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
pH	: Dimethyl sulfoxide	Not available.
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	8.6 to 8.9
	Ethanolamine solution	Not available.
Melting point	: Dimethyl sulfoxide	18.5°C (65.3°F)
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	0°C (32°F)
	Protein 250 Labeling Buffer	0°C (32°F)
	Ethanolamine solution	0°C (32°F)
Boiling point	: Dimethyl sulfoxide	189°C (372.2°F)
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	100°C (212°F)
	Protein 250 Labeling Buffer	100°C (212°F)
	Ethanolamine solution	100°C (212°F)
Flash point	: Dimethyl sulfoxide	Open cup: 87°C (188.6°F)
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
Protein 250 Ladder	Not available.	

Section 9. Physical and chemical properties

Evaporation rate	: Dimethyl sulfoxide	0.026 (butyl acetate = 1)
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
Flammability (solid, gas)	: Dimethyl sulfoxide	Not applicable.
	Protein 250 Labeling Dye	May be combustible at high temperature.
	Protein 250 Destaining Solution	Not applicable.
	Protein 250 Gel Matrix	Not applicable.
	Protein 250 Sample Buffer	Not applicable.
	Protein 250 Labeling Buffer	Not applicable.
	Ethanolamine solution	Not applicable.
Lower and upper explosive (flammable) limits	: Dimethyl sulfoxide	Lower: 2.6% Upper: 28.5%
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
Vapor pressure	: Dimethyl sulfoxide	0.056 kPa (0.42 mm Hg) [room temperature]
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
Vapor density	: Dimethyl sulfoxide	2.7 [Air = 1]
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
Relative density	: Dimethyl sulfoxide	1.1
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
Solubility	: Dimethyl sulfoxide	Easily soluble in the following materials: cold water and hot water.
	Protein 250 Labeling Dye	Easily soluble in the following materials: cold water, hot water and methanol.
	Protein 250 Destaining Solution	Easily soluble in the following materials: cold water and hot water.
	Protein 250 Gel Matrix	Easily soluble in the following materials: cold water and hot water.
	Protein 250 Sample Buffer	Easily soluble in the following materials: cold water

Section 9. Physical and chemical properties

	Protein 250 Labeling Buffer	and hot water. Easily soluble in the following materials: cold water and hot water.
	Ethanolamine solution	Easily soluble in the following materials: cold water and hot water.
	Protein 250 Ladder	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Dimethyl sulfoxide	-1.35
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
	Protein 250 Ladder	Not available.
Auto-ignition temperature	: Dimethyl sulfoxide	300 to 302°C (572 to 575.6°F)
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
	Protein 250 Ladder	Not available.
Decomposition temperature	: Dimethyl sulfoxide	140 to 189°C (284 to 372.2°F)
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
	Protein 250 Ladder	Not available.
Viscosity	: Dimethyl sulfoxide	Dynamic (room temperature): 2.14 mPa·s (2.14 cP)
	Protein 250 Labeling Dye	Not available.
	Protein 250 Destaining Solution	Not available.
	Protein 250 Gel Matrix	Not available.
	Protein 250 Sample Buffer	Not available.
	Protein 250 Labeling Buffer	Not available.
	Ethanolamine solution	Not available.
	Protein 250 Ladder	Not available.

Section 10. Stability and reactivity


10.1 Reactivity	: Dimethyl sulfoxide	No specific test data related to reactivity available for this product or its ingredients.
	Protein 250 Labeling Dye	No specific test data related to reactivity available for this product or its ingredients.
	Protein 250 Destaining Solution	No specific test data related to reactivity available for this product or its ingredients.
	Protein 250 Gel Matrix	No specific test data related to reactivity available for this product or its ingredients.
	Protein 250 Sample Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Protein 250 Labeling Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Ethanolamine solution	No specific test data related to reactivity available for this product or its ingredients.
	Protein 250 Ladder	No specific test data related to reactivity available for this product or its ingredients.

Section 10. Stability and reactivity

10.2 Chemical stability	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
10.5 Incompatible materials	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Reactive or incompatible with the following materials: oxidizing materials May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity


10.6 Hazardous decomposition products

:  Dimethyl sulfoxide	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Protein 250 Labeling Dye	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Protein 250 Destaining Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Protein 250 Gel Matrix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Protein 250 Sample Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Protein 250 Labeling Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Ethanolamine solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Protein 250 Ladder	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
 Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
Dimethyl sulfoxide	LD50 Oral	Rat	14500 mg/kg	-
Protein 250 Destaining Solution				
Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Sodium dodecyl sulphate	LD50 Dermal	Rabbit	580 mg/kg	-
	LD50 Oral	Rat	1288 mg/kg	-
Protein 250 Gel Matrix				
Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Sodium dodecyl sulphate	LD50 Dermal	Rabbit	580 mg/kg	-
	LD50 Oral	Rat	1288 mg/kg	-
Protein 250 Labeling Buffer				
Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Protein 250 Ladder				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Dimethyl sulfoxide Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-
Protein 250 Destaining Solution Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Sodium dodecyl sulphate	Eyes - Mild irritant	Rabbit	-	250 Micrograms	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25 milligrams	-
	Skin - Moderate irritant	Mouse	-	24 hours 25 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
Protein 250 Gel Matrix Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Sodium dodecyl sulphate	Eyes - Mild irritant	Rabbit	-	250 Micrograms	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25 milligrams	-
	Skin - Moderate irritant	Mouse	-	24 hours 25 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
Protein 250 Labeling Buffer Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Protein 250 Ladder Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Section 11. Toxicological information

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Protein 250 Destaining Solution Trometamol	Category 3	Not applicable.	Respiratory tract irritation
Sodium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation
Protein 250 Gel Matrix Trometamol	Category 3	Not applicable.	Respiratory tract irritation
Sodium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation
Protein 250 Labeling Buffer Trometamol	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

: Dimethyl sulfoxide	Routes of entry anticipated: Oral, Dermal, Inhalation.
Protein 250 Labeling Dye	Routes of entry anticipated: Oral, Dermal, Inhalation.
Protein 250 Destaining Solution	Routes of entry anticipated: Oral, Dermal, Inhalation.
Protein 250 Gel Matrix	Routes of entry anticipated: Oral, Dermal, Inhalation.
Protein 250 Sample Buffer	Not available.
Protein 250 Labeling Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
Ethanolamine solution	Not available.
Protein 250 Ladder	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Section 11. Toxicological information

Eye contact	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Causes eye irritation. Causes serious eye damage. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Causes eye irritation.
Inhalation	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	Adverse symptoms may include the following: irritation watering redness Adverse symptoms may include the following: pain watering redness No specific data. No specific data. No specific data. No specific data. No specific data. Adverse symptoms may include the following: irritation watering redness
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Section 11. Toxicological information

Inhalation	:	Dimethyl sulfoxide	No specific data.
		Protein 250 Labeling Dye	No specific data.
		Protein 250 Destaining Solution	No specific data.
		Protein 250 Gel Matrix	No specific data.
		Protein 250 Sample Buffer	No specific data.
		Protein 250 Labeling Buffer	No specific data.
		Ethanolamine solution	No specific data.
Skin contact	:	Dimethyl sulfoxide	No specific data.
		Protein 250 Labeling Dye	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		Protein 250 Destaining Solution	No specific data.
		Protein 250 Gel Matrix	No specific data.
		Protein 250 Sample Buffer	No specific data.
		Protein 250 Labeling Buffer	No specific data.
		Ethanolamine solution	No specific data.
Ingestion	:	Dimethyl sulfoxide	No specific data.
		Protein 250 Labeling Dye	Adverse symptoms may include the following: stomach pains
		Protein 250 Destaining Solution	No specific data.
		Protein 250 Gel Matrix	No specific data.
		Protein 250 Sample Buffer	No specific data.
		Protein 250 Labeling Buffer	No specific data.
		Ethanolamine solution	No specific data.
	Protein 250 Ladder	No specific data.	

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	:	Dimethyl sulfoxide	No known significant effects or critical hazards.
		Protein 250 Labeling Dye	No known significant effects or critical hazards.
		Protein 250 Destaining Solution	No known significant effects or critical hazards.
		Protein 250 Gel Matrix	No known significant effects or critical hazards.
		Protein 250 Sample Buffer	No known significant effects or critical hazards.
		Protein 250 Labeling Buffer	No known significant effects or critical hazards.
		Ethanolamine solution	No known significant effects or critical hazards.
Carcinogenicity	:	Dimethyl sulfoxide	No known significant effects or critical hazards.
		Protein 250 Labeling Dye	No known significant effects or critical hazards.
		Protein 250 Destaining Solution	No known significant effects or critical hazards.
		Protein 250 Gel Matrix	No known significant effects or critical hazards.
		Protein 250 Sample Buffer	No known significant effects or critical hazards.
		Protein 250 Labeling Buffer	No known significant effects or critical hazards.
		Ethanolamine solution	No known significant effects or critical hazards.
	Protein 250 Ladder	No known significant effects or critical hazards.	

Section 11. Toxicological information

Mutagenicity	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Teratogenicity	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Developmental effects	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Fertility effects	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer Ethanolamine solution Protein 250 Ladder	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Protein 250 Destaining Solution Oral Dermal	72338.2 mg/kg 58000.1 mg/kg
Protein 250 Gel Matrix Oral Dermal	63599.7 mg/kg 50993.6 mg/kg
Protein 250 Labeling Buffer Oral	137741 mg/kg

Other information	: Dimethyl sulfoxide Protein 250 Labeling Dye Protein 250 Destaining Solution Protein 250 Gel Matrix Protein 250 Sample Buffer Protein 250 Labeling Buffer	Not available. Not available. Not available. Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking. Not available. Not available.
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Section 11. Toxicological information

Ethanolamine solution
Protein 250 Ladder

Not available.
Not available.

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure	
Dimethyl sulfoxide Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours	
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours	
	Chronic NOEC 100 µl/L Marine water	Algae - Ulva lactuca	72 hours	
Protein 250 Destaining Solution Trometamol	Acute EC50 >980 mg/l Fresh water	Daphnia	48 hours	
	Acute NOEC 520 mg/l Fresh water	Daphnia	48 hours	
	Sodium dodecyl sulphate	Acute EC50 1200 µg/l Marine water	Algae - Skeletonema costatum	96 hours
		Acute LC50 900 µg/l Marine water	Crustaceans - Artemia salina - Adult	48 hours
	Acute LC50 1400 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours	
	Acute LC50 590 µg/l Fresh water	Fish - Cirrhinus mrigala - Larvae	96 hours	
		Chronic NOEC 1.25 mg/l Marine water	Algae - Ulva fasciata - Zoea	96 hours
	Chronic NOEC 1 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	21 days	
Chronic NOEC 3.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days		
Chronic NOEC >1357 µg/l Fresh water	Fish - Pimephales promelas	42 days		
Protein 250 Gel Matrix Trometamol	Acute EC50 >980 mg/l Fresh water	Daphnia	48 hours	
	Acute NOEC 520 mg/l Fresh water	Daphnia	48 hours	
	Sodium dodecyl sulphate	Acute EC50 1200 µg/l Marine water	Algae - Skeletonema costatum	96 hours
		Acute LC50 900 µg/l Marine water	Crustaceans - Artemia salina - Adult	48 hours
	Acute LC50 1400 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours	
	Acute LC50 590 µg/l Fresh water	Fish - Cirrhinus mrigala - Larvae	96 hours	
		Chronic NOEC 1.25 mg/l Marine water	Algae - Ulva fasciata - Zoea	96 hours
	Chronic NOEC 1 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	21 days	
Chronic NOEC 3.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days		
Chronic NOEC >1357 µg/l Fresh water	Fish - Pimephales promelas	42 days		
Protein 250 Labeling Buffer Trometamol	Acute EC50 >980 mg/l Fresh water	Daphnia	48 hours	
	Acute NOEC 520 mg/l Fresh water	Daphnia	48 hours	
Protein 250 Ladder Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours	

12.2 Persistence and degradability

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Protein 250 Destaining Solution Sodium dodecyl sulphate	-	-	Readily
Protein 250 Gel Matrix Sodium dodecyl sulphate	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Dimethyl sulfoxide Dimethyl sulfoxide	-1.35	3.16	low
Protein 250 Destaining Solution Trometamol	-1.56	-	low
Sodium dodecyl sulphate	-2.03	-	low
Protein 250 Gel Matrix Trometamol	-1.56	-	low
Sodium dodecyl sulphate	-2.03	-	low
Protein 250 Labeling Buffer Trometamol	-1.56	-	low
Protein 250 Ladder Glycerol	-1.76	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : Protein 250 Ladder Not available.

Section 13. Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : United States inventory (TSCA 8b): Not determined.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Protein 250 Ladder Sodium azide	≤0.1	Yes.	500	-	1000	-

SARA 304 RQ : 8888888.9 lbs / 4035555.6 kg

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard

Section 15. Regulatory information

Dimethyl sulfoxide Dimethyl sulfoxide	100	Yes.	No.	No.	Yes.	No.
Protein 250 Labeling Dye 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propen-1-yl]-3-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, sodium salt (1:1)	100	No.	No.	No.	Yes.	No.
Protein 250 Destaining Solution Trometamol	≤5	Yes.	No.	No.	Yes.	No.
Sodium dodecyl sulphate	≤2	Yes.	No.	No.	Yes.	No.
Protein 250 Gel Matrix Trometamol	≤5	Yes.	No.	No.	Yes.	No.
Sodium dodecyl sulphate	≤2	Yes.	No.	No.	Yes.	No.
Protein 250 Labeling Buffer Trometamol	≤5	Yes.	No.	No.	Yes.	No.
Protein 250 Ladder Glycerol	≥10 - ≤25	No.	No.	No.	Yes.	No.

State regulations

Massachusetts

: The following components are listed: GLYCERINE MIST

New York

: None of the components are listed.

New Jersey

: The following components are listed: DIMETHYL SULFOXIDE; METHANE, SULFINYLBIIS-; GLYCERIN; 1,2,3-PROPANETRIOL

Pennsylvania

: The following components are listed: 1,2,3-PROPANETRIOL

California Prop. 65

No products were found.

Canada inventory

: Not determined.

International regulations

International lists

: **Australia inventory (AICS):** Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Turkey inventory: Not determined.

Chemical Weapons

: Not listed

Convention List Schedule I Chemicals

Chemical Weapons

: Not listed

Convention List Schedule II Chemicals

Chemical Weapons

: Not listed

Convention List Schedule III Chemicals

Section 16. Other information

History

Date of issue : 03/08/2016

Date of previous issue : 03/30/2015.

Version : 6

✔ Indicates information that has changed from previously issued version.

Notice to reader

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