

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Code:** 600022
Product Name: Transcription Factor p53 Positive Control
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
Relevant identified uses: For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
Company Name: Cayman Chemical Company
 1180 E. Ellsworth Rd.
 Ann Arbor, MI 48108
Web site address: www.caymanchem.com
Information: Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
 CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**
Flammable Liquids, Category 4
Acute Toxicity: Oral, Category 4
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Eye Irritation, Category 2
- 2.1.2 Classification according to Directive 1999/45/EC:**
Xn: Harmful
Risk Phrases: R22, R36/37/38, R41, R43, R52
For full text of R- phrases: see SECTION 15.
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**



GHS Signal Word: Warning

GHS Hazard Phrases:

H227: Combustible liquid.
 H302: Harmful if swallowed.
 H315: Causes skin irritation.
 H319: Causes serious eye irritation.

GHS Precaution Phrases:

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.
 P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.
 P264: Wash {hands} thoroughly after handling.
 P362+364: Take off contaminated clothing and wash it before reuse.

GHS Response Phrases:

P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
 P330: Rinse mouth.
 P302+352: IF ON SKIN: Wash with plenty of soap and water.
 P332+313: If skin irritation occurs, get medical advice/attention.
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.
 P337+313: If eye irritation persists, get medical advice/attention.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.2.2 Labeling according to Directive 1999/45/EC:



Xn

2.3 Adverse Human Health Causes skin irritation.

Effects and Symptoms: Causes serious eye irritation.

DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.

DMSO is readily absorbed through skin.

Harmful if swallowed.

Material may be irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation or skin absorption.

May cause respiratory irritation.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	Risk Phrases/ GHS Classification
NA NA	Transcription Factor p53 Positive Control	0.0 -10.0 %	NA NA	No phrases apply. No data available.
56-81-5 MA8050000	Glycerol	5.0 -20.0 %	200-289-5 NA	No phrases apply. No data available.
68987-90-6 NA	Nonidet P-40	0.0 -1.0 %	NA NA	Xi; R41 Eye Damage 1: H318
67-68-5 PV6210000	Dimethyl sulfoxide, anhydrous	0.0 -5.0 %	200-664-3 NA	Xi; R36/38 Flam. Liq. 4: H227 Eye Damage 2A: H319 Skin Corr. 2: H315
7791-18-6 OM2975000	Magnesium chloride, hexahydrate	0.0 -5.0 %	NA NA	Xi; R36/37/38 Skin Corr. 2: H315 Eye Damage 2A: H319 TOST (SE) 3: H335 H336
7447-40-7 TS8050000	Potassium chloride	0.0 -5.0 %	231-211-8 NA	R52 Acute Tox.(O) 5: H303 Aquatic (A) 3: H402
7365-45-9 TL6809000	HEPES, free acid	0.0 -5.0 %	230-907-9 NA	Xi; R43-36/37/38 Skin Corr. 2: H315 Eye Damage 2A: H319
3483-12-3 EK1610000	DL-Dithiothreitol	0.0 -1.0 %	222-468-7 NA	Xn; R22-36/37/38 Acute Tox.(O) 4: H302 Skin Corr. 2: H315 Eye Damage 2A: H319 TOST (SE) 3: H335 H336
7732-18-5 ZC0110000	Water	48.0 -95.0 %	231-791-2 NA	No phrases apply. No data available.

Section 4. First Aid Measures

- 4.1 Description of First Aid** No data available.
- Measures:**
- In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
- In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
- 4.2 Important Symptoms and Effects, Both Acute and Delayed:**
- Exposure may cause: damage to kidneys.
 Exposure may cause: hematuria or shortness of breath (dyspnea).
 Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.
 Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.
 Prolonged exposure may cause nausea, headache, and vomiting.

Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Media: Use water spray to cool fire-exposed containers.
Unsuitable Extinguishing Media: A solid water stream may be inefficient.
- 5.2 Flammable Properties and Hazards:** Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.
 Container explosion may occur under fire conditions.
 Emits toxic fumes under fire conditions.
 Sensitive to static discharge.
 Vapors can travel to a source of ignition and flash back.
- Flash Pt:** No data.
Explosive Limits: LEL: No data. UEL: No data.
Autoignition Pt: No data.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
 Note: Combustible as diluted in dimethyl sulfoxide

Section 6. Accidental Release Measures

- 6.1 Protective Precautions, Protective Equipment and Emergency Procedures:** Avoid breathing vapors and provide adequate ventilation.
 As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
- 6.2 Environmental Precautions:** Take steps to avoid release into the environment, if safe to do so.
- 6.3 Methods and Material For Containment and Cleaning Up:** Contain spill and collect, as appropriate.
 Transfer to a chemical waste container for disposal in accordance with local regulations.

Transcription Factor p53 Positive Control

Revision: 02/28/2014

Supersedes Revision: 03/09/2009

Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.
Avoid prolonged or repeated exposure.
Keep away from sources of ignition.
Take precautionary measures against static discharge.
- 7.2 Precautions To Be Taken in Storing:** Keep away from heat, sparks and flame.
Keep container tightly closed.
Store in accordance with information listed on the product insert.
- Other Precautions:** Hygroscopic.

Section 8. Exposure Controls/Personal Protection
8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
NA	Transcription Factor p53 Positive Control	No data.	No data.	No data.
56-81-5	Glycerol	TWA: 10 mg/m3 () STEL: ()	TWA: 10 mg/m3	No data.
68987-90-6	Nonidet P-40	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7447-40-7	Potassium chloride	No data.	No data.	No data.
7365-45-9	HEPES, free acid	No data.	No data.	No data.
3483-12-3	DL-Dithiothreitol	No data.	No data.	No data.
7732-18-5	Water	No data.	No data.	No data.

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
NA	Transcription Factor p53 Positive Control	No data.	No data.	No data.
56-81-5	Glycerol	PEL: 15 (dust); 5 (resp.) mg/m3	TLV: 10 mg/m3	No data.
68987-90-6	Nonidet P-40	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7447-40-7	Potassium chloride	No data.	No data.	No data.
7365-45-9	HEPES, free acid	No data.	No data.	No data.
3483-12-3	DL-Dithiothreitol	No data.	No data.	No data.
7732-18-5	Water	No data.	No data.	No data.

8.2 Exposure Controls:

8.2.1 Engineering Controls (Ventilation etc.): Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2 Personal protection equipment:

Eye Protection: Safety glasses

Protective Gloves: Compatible chemical-resistant gloves

Other Protective Clothing: Lab coat

Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.

Transcription Factor p53 Positive Control

Revision: 02/28/2014

Supersedes Revision: 03/09/2009

Work/Hygienic/Maintenance Practices: Do not take internally.
 Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
 Wash thoroughly after handling.

Section 9. Physical and Chemical Properties
9.1 Information on Basic Physical and Chemical Properties

Physical States: Gas Liquid Solid
Appearance and Odor: Solution
pH: 7.9
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Explosive Limits: LEL: No data. UEL: No data.
Vapor Pressure (vs. Air or mm Hg): No data.
Vapor Density (vs. Air = 1): No data.
Specific Gravity (Water = 1): No data.
Solubility in Water: No data.
Autoignition Pt: No data.

9.2 Other Information

Percent Volatile: No data.

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.
10.2 Stability: Unstable Stable
10.3 Stability Note(s): No data available.
Polymerization: Will occur Will not occur
10.4 Conditions To Avoid: No data available.
10.5 Incompatibility - Materials To Avoid: acid chlorides
 alkali metals
 phosphorus halides
 strong acids
 strong bases
 strong oxidizing agents
 strong reducing agents
10.6 Hazardous Decomposition Or Byproducts: carbon dioxide
 carbon monoxide
 sulfur oxides

Transcription Factor p53 Positive Control

Revision: 02/28/2014

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Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.
 DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m³ (4h);
 DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;
 Glycerol - Irritation Data: Eyes (rabbit): 500 mg (24h) mild; Skin (rabbit): 500 mg (24h) mild;

Chronic Toxicological Effects: DMSO - Investigated as a mutagen, reproductive effector, and tumorigen.
 Glycerol - Investigated as a mutagen, reproductive effector, and tumorigen.
 Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.
 DMSO RTECS Number: PV6210000
 Glycerol RTECS Number: MA8050000

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
 Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information
14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Not dangerous goods.

DOT Hazard Class:

UN/NA Number:

14.1 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name: Not dangerous goods.

UN Number:

Hazard Class:

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information
EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
NA	Transcription Factor p53 Positive Control	No	No	No
56-81-5	Glycerol	No	No	No
68987-90-6	Nonidet P-40	No	No	No
67-68-5	Dimethyl sulfoxide, anhydrous	No	No	No
7791-18-6	Magnesium chloride, hexahydrate	No	No	No
7447-40-7	Potassium chloride	No	No	No
7365-45-9	HEPES, free acid	No	No	No

3483-12-3	DL-Dithiothreitol	No	No	No
7732-18-5	Water	No	No	No
CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists		
NA	Transcription Factor p53 Positive Control	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No		
56-81-5	Glycerol	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No		
68987-90-6	Nonidet P-40	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No		
67-68-5	Dimethyl sulfoxide, anhydrous	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No		
7791-18-6	Magnesium chloride, hexahydrate	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No		
7447-40-7	Potassium chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No		
7365-45-9	HEPES, free acid	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No		
3483-12-3	DL-Dithiothreitol	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No		
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Inventory; CA PROP.65: No		

European Community Hazard Symbol codes:


Xn

European Community Risk and Safety Phrases:

R22	Harmful if swallowed.
R36/37/38	Irritating to eyes, respiratory system and skin.
R41	Risk of serious damage to the eyes.
R43	May cause sensitization by skin contact.
R52	Harmful to aquatic organisms.
S24/25	Avoid contact with skin and eyes.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.

Regulatory Information Statement:

This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information

Revision Date: 02/28/2014

Additional Information About No data available.

This Product:

Company Policy or

Disclaimer:

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.