

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:** 10010993
Product Name: SIRT1 Direct Assay Buffer (10X)
- 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]:**
Skin Corrosion/Irritation, Category 3
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**
- GHS Signal Word:** **Warning**
- GHS Hazard Phrases:**
 H316: Causes mild skin irritation.
- GHS Precaution Phrases:**
 No phrases apply.
- GHS Response Phrases:**
 P332+313: If skin irritation occurs, get medical advice/attention.
- GHS Storage and Disposal Phrases:**
 No phrases apply.
- 2.3 Adverse Human Health** Causes mild skin irritation.
Effects and Symptoms: Material may be irritating to the mucous membranes and upper respiratory tract.
 May be harmful by inhalation, ingestion, or skin absorption.
 May cause eye or respiratory system 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.	GHS Classification
7447-40-7 TS8050000	Potassium chloride	0.1 %	231-211-8 NA	Acute Tox.(O) 5: H303 Aquatic (A) 3: H402
7791-18-6 OM2975000	Magnesium chloride, hexahydrate	0.1 %	NA NA	No data available.
7647-14-5 VZ4725000	Sodium chloride	8.0 %	231-598-3 NA	No data available.

77-86-1 TY2900000	Trizma base	6.0 %	201-064-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335
7732-18-5 ZC0110000	Water	85.8 %	231-791-2 NA	No data available.

Section 4. First Aid Measures

4.1 Description of First Aid 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.

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:

No data available.

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.

Section 6. Accidental Release Measures

6.1 Protective Precautions,

Avoid breathing vapors and provide adequate ventilation.

Protective Equipment and Emergency Procedures:

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.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Precautions To Be Taken in Storing:

Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing:

Keep container tightly closed.

Precautions To Be Taken in Handling:

Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
7447-40-7	Potassium chloride	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7647-14-5	Sodium chloride	No data.	No data.	No data.
77-86-1	Trizma base	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
7447-40-7	Potassium chloride	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7647-14-5	Sodium chloride	No data.	No data.	No data.
77-86-1	Trizma base	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.

Work/Hygienic/Maintenance Practices: Do not take internally.

Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.

No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [X] Liquid [] Solid

Appearance and Odor: Solution

pH: 8.0

Melting Point: No data.

Boiling Point: No data.

Flash Pt: No data.

Evaporation Rate: No data.

Flammability (solid, gas): No data available.

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 [X]
10.3 Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
Polymerization:	Will occur [] Will not occur [X]
10.4 Conditions To Avoid:	No data available.
10.5 Incompatibility - Materials To Avoid:	No data available.
10.6 Hazardous Decomposition or Byproducts:	No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects:	The toxicological effects of this product have not been thoroughly studied.
Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
7447-40-7	Potassium chloride	n.a.	n.a.	n.a.	n.a.
7791-18-6	Magnesium chloride, hexahydrate	n.a.	n.a.	n.a.	n.a.
7647-14-5	Sodium chloride	n.a.	n.a.	n.a.	n.a.
77-86-1	Trizma base	n.a.	n.a.	n.a.	n.a.
7732-18-5	Water	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

12.1 Toxicity:	Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.
12.2 Persistence and Degradability:	No data available.
12.3 Bioaccumulative Potential:	No data available.
12.4 Mobility in Soil:	No data available.
12.5 Results of PBT and vPvB assessment:	No data available.
12.6 Other adverse effects:	No data available.



SAFETY DATA SHEET

SIRT1 Direct Assay Buffer (10X)

Revision: 05/07/2015
Supersedes Revision: 05/30/2008

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.

Information:

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)
7447-40-7	Potassium chloride	No	No	No
7791-18-6	Magnesium chloride, hexahydrate	No	No	No
7647-14-5	Sodium chloride	No	No	No
77-86-1	Trizma base	No	No	Yes-Cat. N106
7732-18-5	Water	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
7447-40-7	Potassium chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7791-18-6	Magnesium chloride, hexahydrate	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
7647-14-5	Sodium chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
77-86-1	Trizma base	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

Regulatory Information Statement:

This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 05/07/2015

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.

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:** 10010994
Product Name: SIRT1 Direct (human recombinant)
- 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]:**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**
- GHS Signal Word:** None
- GHS Hazard Phrases:**
 Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.
- GHS Precaution Phrases:**
 No phrases apply.
- GHS Response Phrases:**
 No phrases apply.
- GHS Storage and Disposal Phrases:**
 Please refer to Section 7 for Storage and Section 13 for Disposal information.
- 2.3 Adverse Human Health** Material may be irritating to the mucous membranes and upper respiratory tract.
- Effects and Symptoms:** May be harmful by inhalation, ingestion, or skin absorption.
 May cause eye, skin, or respiratory system 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.	GHS Classification
NA NA	SIRT1 (human recombinant)	0.0 -5.0 %	NA NA	No data available.
7758-79-4 NA	Sodium phosphate	0.0 -5.0 %	231-839-2 NA	No data available.
7732-18-5 ZC0110000	Water	90.0 -100.0 %	231-791-2 NA	No data available.

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

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.

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: No data available.

Hazards:

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.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Avoid breathing vapors and provide adequate ventilation.

Protective Equipment and Emergency Procedures: 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.

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.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed.

Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
NA	SIRT1 (human recombinant)	No data.	No data.	No data.
7758-79-4	Sodium phosphate	No data.	No data.	No data.



SAFETY DATA SHEET

SIRT1 Direct (human recombinant)

Revision: 05/07/2015
Supersedes Revision: 06/02/2008

7732-18-5	Water	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
NA	SIRT1 (human recombinant)	No data.	No data.	No data.
7758-79-4	Sodium phosphate	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.

Work/Hygienic/Maintenance Practices: Do not take internally.

Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.

Wash thoroughly after handling.

No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [X] Liquid [] Solid

Appearance and Odor: Solution

pH: 7.2

Melting Point: No data.

Boiling Point: No data.

Flash Pt: No data.

Evaporation Rate: No data.

Flammability (solid, gas): No data available.

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 [X]
- 10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.
- Polymerization:** Will occur [] Will not occur [X]
- 10.4 Conditions To Avoid:** No data available.
- 10.5 Incompatibility - Materials To Avoid:** No data available.
- 10.6 Hazardous Decomposition or Byproducts:** No data available.

Section 11. Toxicological Information

- 11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.
- Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
NA	SIRT1 (human recombinant)	n.a.	n.a.	n.a.	n.a.
7758-79-4	Sodium phosphate	n.a.	n.a.	n.a.	n.a.
7732-18-5	Water	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

- 12.1 Toxicity:** Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.
- 12.2 Persistence and Degradability:** No data available.
- 12.3 Bioaccumulative Potential:** No data available.
- 12.4 Mobility in Soil:** No data available.
- 12.5 Results of PBT and vPvB assessment:** No data available.
- 12.6 Other adverse effects:** No data available.

Section 13. Disposal Considerations

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



SAFETY DATA SHEET

SIRT1 Direct (human recombinant)

Revision: 05/07/2015
Supersedes Revision: 06/02/2008

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	SIRT1 (human recombinant)	No	No	No
7758-79-4	Sodium phosphate	No	No	No
7732-18-5	Water	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
NA	SIRT1 (human recombinant)	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
7758-79-4	Sodium phosphate	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 05/07/2015

Additional Information About This Product: 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.

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:** 10010995
Product Name: SIRT1 Direct Peptide
- 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]:**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**
- GHS Signal Word:** None
- GHS Hazard Phrases:**
Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.
- GHS Precaution Phrases:**
No phrases apply.
- GHS Response Phrases:**
No phrases apply.
- GHS Storage and Disposal Phrases:**
Please refer to Section 7 for Storage and Section 13 for Disposal information.
- 2.3 Adverse Human Health** Material may be irritating to the mucous membranes and upper respiratory tract.
- Effects and Symptoms:** May be harmful by inhalation, ingestion, or skin absorption.
May cause eye, skin, or respiratory system 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.	GHS Classification
NA NA	SIRT1 Direct Peptide	0.45 %	NA NA	No data available.
7791-18-6 OM2975000	Magnesium chloride, hexahydrate	0.01 %	NA NA	No data available.
7447-14-5 NA	Potassium Chloride	0.01 %	NA NA	No data available.
7647-14-5 VZ4725000	Sodium chloride	0.8 %	231-598-3 NA	No data available.

77-86-1 TY2900000	Trizma base	0.6 %	201-064-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335
7732-18-5 ZC0110000	Water	98.13 %	231-791-2 NA	No data available.

Section 4. First Aid Measures

4.1 Description of First Aid
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.

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: No data available.

Hazards:

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.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Avoid breathing vapors and provide adequate ventilation.

Protective Equipment and Emergency Procedures: 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.

Up:

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.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed.

Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
NA	SIRT1 Direct Peptide	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7447-14-5	Potassium Chloride	No data.	No data.	No data.
7647-14-5	Sodium chloride	No data.	No data.	No data.
77-86-1	Trizma base	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	SIRT1 Direct Peptide	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7447-14-5	Potassium Chloride	No data.	No data.	No data.
7647-14-5	Sodium chloride	No data.	No data.	No data.
77-86-1	Trizma base	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.

Work/Hygienic/Maintenance Practices: Do not take internally.

Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.

No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [X] Liquid [] Solid
Appearance and Odor: Solution
pH: 8.0
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Flammability (solid, gas): No data available.
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 [X]
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
Polymerization: Will occur [] Will not occur [X]
10.4 Conditions To Avoid: No data available.
10.5 Incompatibility - Materials To Avoid: No data available.
10.6 Hazardous Decomposition or Byproducts: No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

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

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
NA	SIRT1 Direct Peptide	n.a.	n.a.	n.a.	n.a.
7791-18-6	Magnesium chloride, hexahydrate	n.a.	n.a.	n.a.	n.a.
7447-14-5	Potassium Chloride	n.a.	n.a.	n.a.	n.a.
7647-14-5	Sodium chloride	n.a.	n.a.	n.a.	n.a.
77-86-1	Trizma base	n.a.	n.a.	n.a.	n.a.
7732-18-5	Water	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

- 12.1 Toxicity:** Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.
- 12.2 Persistence and Degradability:** No data available.
- 12.3 Bioaccumulative Potential:** No data available.
- 12.4 Mobility in Soil:** No data available.
- 12.5 Results of PBT and vPvB assessment:** No data available.
- 12.6 Other adverse effects:** No data available.

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	SIRT1 Direct Peptide	No	No	No
7791-18-6	Magnesium chloride, hexahydrate	No	No	No
7447-14-5	Potassium Chloride	No	No	No
7647-14-5	Sodium chloride	No	No	No
77-86-1	Trizma base	No	No	Yes-Cat. N106
7732-18-5	Water	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
NA	SIRT1 Direct Peptide	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
7791-18-6	Magnesium chloride, hexahydrate	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
7447-14-5	Potassium Chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
7647-14-5	Sodium chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes -



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		Inventory; CA PROP.65: No
77-86-1	Trizma base	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 05/07/2015

Additional Information About This Product: 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.

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:** 10010996
Product Name: SIRT1 Direct NAD+
- 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]:**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**
- GHS Signal Word:** None
- GHS Hazard Phrases:**
Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.
- GHS Precaution Phrases:**
No phrases apply.
- GHS Response Phrases:**
No phrases apply.
- GHS Storage and Disposal Phrases:**
Please refer to Section 7 for Storage and Section 13 for Disposal information.
- 2.3 Adverse Human Health** Material may be irritating to the mucous membranes and upper respiratory tract.
Effects and Symptoms: May be harmful by inhalation, ingestion, or skin absorption.
May cause eye, skin, or respiratory system 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.	GHS Classification
53-84-9 UU3450000	NAD+	3.6 %	200-184-4 NA	No data available.
7791-18-6 OM2975000	Magnesium chloride, hexahydrate	0.01 %	NA NA	No data available.
7447-14-5 NA	Potassium Chloride	0.01 %	NA NA	No data available.
7647-14-5 VZ4725000	Sodium chloride	0.8 %	231-598-3 NA	No data available.

77-86-1 TY2900000	Trizma base	0.6 %	201-064-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335
7732-18-5 ZC0110000	Water	94.98 %	231-791-2 NA	No data available.

Section 4. First Aid Measures

4.1 Description of First Aid 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.

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:

No data available.

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.

Section 6. Accidental Release Measures

6.1 Protective Precautions,

Avoid breathing vapors and provide adequate ventilation.

Protective Equipment and Emergency Procedures:

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.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Precautions To Be Taken in Storing:

Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing:

Keep container tightly closed.

Precautions To Be Taken in Handling:

Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
53-84-9	NAD+	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7447-14-5	Potassium Chloride	No data.	No data.	No data.
7647-14-5	Sodium chloride	No data.	No data.	No data.
77-86-1	Trizma base	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
53-84-9	NAD+	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7447-14-5	Potassium Chloride	No data.	No data.	No data.
7647-14-5	Sodium chloride	No data.	No data.	No data.
77-86-1	Trizma base	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.

Work/Hygienic/Maintenance Practices: Do not take internally.

Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
Wash thoroughly after handling.
No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [X] Liquid [] Solid
Appearance and Odor: Solution
pH: 8.0
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Flammability (solid, gas): No data available.
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 [X]
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
Polymerization: Will occur [] Will not occur [X]
10.4 Conditions To Avoid: No data available.
10.5 Incompatibility - Materials To Avoid: No data available.
10.6 Hazardous Decomposition or Byproducts: No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.
Chronic Toxicological Effects: NAD+ - Toxicity Data: Intraperitoneal LD50 (mouse): 4333 mg/kg;
 NAD+ - Investigated as a mutagen.
 Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.
 See actual entry in RTECS for complete information.
 NAD+ RTECS Number: UU3450000
Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
53-84-9	NAD+	n.a.	n.a.	n.a.	n.a.
7791-18-6	Magnesium chloride, hexahydrate	n.a.	n.a.	n.a.	n.a.
7447-14-5	Potassium Chloride	n.a.	n.a.	n.a.	n.a.
7647-14-5	Sodium chloride	n.a.	n.a.	n.a.	n.a.
77-86-1	Trizma base	n.a.	n.a.	n.a.	n.a.



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7732-18-5	Water	n.a.	n.a.	n.a.	n.a.
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Section 12. Ecological Information

12.1 Toxicity:	Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.
12.2 Persistence and Degradability:	No data available.
12.3 Bioaccumulative Potential:	No data available.
12.4 Mobility in Soil:	No data available.
12.5 Results of PBT and vPvB assessment:	No data available.
12.6 Other adverse effects:	No data available.

Section 13. Disposal Considerations

13.1 Waste Disposal Method:	Dispose in accordance with local, state, and federal regulations.
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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)
53-84-9	NAD+	No	No	No
7791-18-6	Magnesium chloride, hexahydrate	No	No	No
7447-14-5	Potassium Chloride	No	No	No
7647-14-5	Sodium chloride	No	No	No
77-86-1	Trizma base	No	No	Yes-Cat. N106
7732-18-5	Water	No	No	No
CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists		
53-84-9	NAD+	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No		
7791-18-6	Magnesium chloride, hexahydrate	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No		
7447-14-5	Potassium Chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No		



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7647-14-5	Sodium chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
77-86-1	Trizma base	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 05/07/2015

Additional Information About This Product: 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.

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:** 10010997
Product Name: SIRT1 Direct Nicotinamide
- 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]:**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**
- GHS Signal Word:** None
- GHS Hazard Phrases:**
 Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.
- GHS Precaution Phrases:**
 No phrases apply.
- GHS Response Phrases:**
 No phrases apply.
- GHS Storage and Disposal Phrases:**
 Please refer to Section 7 for Storage and Section 13 for Disposal information.
- 2.3 Adverse Human Health** Material may be irritating to the mucous membranes and upper respiratory tract.
- Effects and Symptoms:** May be harmful by inhalation, ingestion, or skin absorption.
 May cause eye, skin, or respiratory system 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.	GHS Classification
98-92-0 QS3675000	Nicotinamide	0.61 %	202-713-4 NA	Eye Damage 2: H319
7791-18-6 OM2975000	Magnesium chloride, hexahydrate	0.01 %	NA NA	No data available.
7447-14-5 NA	Potassium Chloride	0.01 %	NA NA	No data available.
7647-14-5 VZ4725000	Sodium chloride	0.8 %	231-598-3 NA	No data available.

77-86-1 TY2900000	Trizma base	0.6 %	201-064-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335
7732-18-5 ZC0110000	Water	97.97 %	231-791-2 NA	No data available.

Section 4. First Aid Measures

4.1 Description of First Aid
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.

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: No data available.

Hazards:

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.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Avoid breathing vapors and provide adequate ventilation.

Protective Equipment and Emergency Procedures: 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.

Up:

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.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed.

Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
98-92-0	Nicotinamide	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7447-14-5	Potassium Chloride	No data.	No data.	No data.
7647-14-5	Sodium chloride	No data.	No data.	No data.
77-86-1	Trizma base	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
98-92-0	Nicotinamide	No data.	No data.	No data.
7791-18-6	Magnesium chloride, hexahydrate	No data.	No data.	No data.
7447-14-5	Potassium Chloride	No data.	No data.	No data.
7647-14-5	Sodium chloride	No data.	No data.	No data.
77-86-1	Trizma base	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.

Work/Hygienic/Maintenance Practices: Do not take internally.

Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.

No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [X] Liquid [] Solid
Appearance and Odor: Solution
pH: 8.0
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Flammability (solid, gas): No data available.
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 [X]
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
Polymerization: Will occur [] Will not occur [X]
10.4 Conditions To Avoid: No data available.
10.5 Incompatibility - Materials To Avoid: No data available.
10.6 Hazardous Decomposition or Byproducts: No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

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

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
98-92-0	Nicotinamide	n.a.	n.a.	n.a.	n.a.
7791-18-6	Magnesium chloride, hexahydrate	n.a.	n.a.	n.a.	n.a.
7447-14-5	Potassium Chloride	n.a.	n.a.	n.a.	n.a.
7647-14-5	Sodium chloride	n.a.	n.a.	n.a.	n.a.
77-86-1	Trizma base	n.a.	n.a.	n.a.	n.a.
7732-18-5	Water	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

- 12.1 Toxicity:** Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.
- 12.2 Persistence and Degradability:** No data available.
- 12.3 Bioaccumulative Potential:** No data available.
- 12.4 Mobility in Soil:** No data available.
- 12.5 Results of PBT and vPvB assessment:** No data available.
- 12.6 Other adverse effects:** No data available.

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)
98-92-0	Nicotinamide	No	No	Yes-Cat. N503
7791-18-6	Magnesium chloride, hexahydrate	No	No	No
7447-14-5	Potassium Chloride	No	No	No
7647-14-5	Sodium chloride	No	No	No
77-86-1	Trizma base	No	No	Yes-Cat. N106
7732-18-5	Water	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
98-92-0	Nicotinamide	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7791-18-6	Magnesium chloride, hexahydrate	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
7447-14-5	Potassium Chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
7647-14-5	Sodium chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes -



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		Inventory; CA PROP.65: No
77-86-1	Trizma base	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 05/07/2015

Additional Information About This Product: 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.

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:** 10010998
Product Name: SIRT1 Direct Developer
- 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]:**
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Eye Irritation, Category 2
Respiratory Sensitization, Category 1
Specific Target Organ Toxicity (single exposure), Category 3
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**



GHS Signal Word: Danger

GHS Hazard Phrases:

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335: May cause respiratory irritation.

GHS Precaution Phrases:

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

P264: Wash {hands} thoroughly after handling.

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

P285: In case of inadequate ventilation wear respiratory protection.

GHS Response Phrases:

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P332+313: If skin irritation occurs, get medical advice/attention.
 P337+313: If eye irritation persists, get medical advice/attention.
 P342+311: If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.
 P362+364: Take off contaminated clothing and wash it before reuse.

GHS Storage and Disposal Phrases:

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

2.3 Adverse Human Health Causes skin and serious eye irritation.
Effects and Symptoms: Material may be irritating to the mucous membranes and upper respiratory tract.
 May be harmful by inhalation, ingestion, or skin absorption.
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 May cause respiratory system 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.	GHS Classification
NA NA	SIRT1 Direct Developer	100.0 %	NA NA	Skin Corr. 2: H315 Eye Damage 2: H319 Resp. Sens. 1: H334 STOT (SE) 3: H335 H336

Section 4. First Aid Measures

4.1 Description of First Aid 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.

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: No data available.
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.

Section 6. Accidental Release Measures

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

Section 7. Handling and Storage

- 7.1 Precautions To Be Taken** Avoid breathing dust/fume/gas/mist/vapours/spray.
in Handling: Avoid prolonged or repeated exposure.
- 7.2 Precautions To Be Taken** Keep container tightly closed.
in Storing: Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
NA	SIRT1 Direct Developer	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
NA	SIRT1 Direct Developer	No data.	No data.	No data.

8.2 Exposure Controls:

- 8.2.1 Engineering Controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne
(Ventilation etc.): 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** NIOSH approved respirator, as conditions warrant.
(Specify Type):
- Work/Hygienic/Maintenan** Do not take internally.
ce Practices: Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
 Wash thoroughly after handling.
 No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [] Liquid [X] Solid

Appearance and Odor: A crystalline solid

Melting Point: No data.

Boiling Point: No data.

Flash Pt: No data.

Evaporation Rate: No data.

Flammability (solid, gas): No data available.

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 [X]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

Polymerization: Will occur [] Will not occur [X]

10.4 Conditions To Avoid: No data available.

10.5 Incompatibility - Materials To Avoid: Strong oxidizing agents

10.6 Hazardous Decomposition or Byproducts: No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
NA	SIRT1 Direct Developer	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

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

12.2 Persistence and Degradability: No data available.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.



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12.6 Other adverse effects: No data available.

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	SIRT1 Direct Developer	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
NA	SIRT1 Direct Developer	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 05/07/2015

Additional Information About This Product: No data available.

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.

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:** 10010999
Product Name: SIRT1 Direct Fluorophore
- 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
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Eye Irritation, Category 2
- 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.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

GHS Precaution Phrases:

P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

P264: Wash {hands} thoroughly after handling.

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

GHS Response Phrases:

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+313: If skin irritation occurs, get medical advice/attention.

P337+313: If eye irritation persists, get medical advice/attention.

P362+364: Take off contaminated clothing and wash it before reuse.

GHS Storage and Disposal Phrases:

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

2.3 Adverse Human Health	Causes skin and serious eye irritation.
Effects and Symptoms:	<p>DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.</p> <p>DMSO is readily absorbed through skin.</p> <p>Material may be irritating to the mucous membranes and upper respiratory tract.</p> <p>May be harmful by inhalation, ingestion, or skin absorption.</p> <p>May cause respiratory system irritation.</p> <p>To the best of our knowledge, the toxicological properties have not been thoroughly investigated.</p>

Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
26093-31-2 NA	7-Amino-4-methylcoumarin	0.177 %	247-454-8 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335
67-68-5 PV6210000	Dimethyl sulfoxide, anhydrous	99.823 %	200-664-3 NA	Flam. Liq. 4: H227 Eye Damage 2A: H319 Skin Corr. 2: H315

Section 4. First Aid Measures

4.1 Description of First Aid Measures:	<p>In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.</p> <p>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.</p> <p>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.</p> <p>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.</p>
4.2 Important Symptoms and Effects, Both Acute and Delayed:	<p>Exposure may cause: hematuria or shortness of breath (dyspnea).</p> <p>Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.</p> <p>Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.</p>

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Unsuitable Extinguishing Media:	A solid water stream may be inefficient.
5.2 Flammable Properties and Hazards:	<p>Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.</p> <p>Container explosion may occur under fire conditions.</p> <p>Emits toxic fumes under fire conditions.</p> <p>Sensitive to static discharge.</p> <p>Vapors can travel to a source of ignition and flash back.</p>
Flash Pt:	89.00 C Method Used: Closed Cup
Explosive Limits:	LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
Autoignition Pt:	215.00 C

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, Avoid breathing vapors and provide adequate ventilation.
Protective Equipment and Emergency Procedures: 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.

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
26093-31-2	7-Amino-4-methylcoumarin	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
26093-31-2	7-Amino-4-methylcoumarin	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	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.

Work/Hygienic/Maintenance Practices: Do not take internally.
 Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
 Wash thoroughly after handling.
 No data available.

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

Physical States: [] Gas [X] Liquid [] Solid
Appearance and Odor: Solution
Melting Point: No data.
Boiling Point: No data.
Flash Pt: 89.00 C Method Used: Closed Cup
Evaporation Rate: No data.
Flammability (solid, gas): No data available.
Explosive Limits: LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
Vapor Pressure (vs. Air or mm Hg): 0.37 MM_HG at 20.0 C
Vapor Density (vs. Air = 1): No data.
Specific Gravity (Water = 1): No data.
Solubility in Water: No data.
Autoignition Pt: 215.00 C

9.2 Other Information

Percent Volatile: No data.

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.
10.2 Stability: Unstable [] Stable [X]
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
Polymerization: Will occur [] Will not occur [X]
10.4 Conditions To Avoid: heat, flames and sparks
10.5 Incompatibility - Materials To Avoid: acid chlorides
phosphorus halides
strong acids
alkali metals
strong oxidizing agents
strong reducing agents
10.6 Hazardous Decomposition or Byproducts: carbon monoxide
carbon dioxide
sulfur oxides

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;

Chronic Toxicological Effects: DMSO - 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

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

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
26093-31-2	7-Amino-4-methylcoumarin	n.a.	n.a.	n.a.	n.a.
67-68-5	Dimethyl sulfoxide, anhydrous	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

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

12.2 Persistence and Degradability: No data available.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

12.6 Other adverse effects: No data available.

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.



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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)
26093-31-2	7-Amino-4-methylcoumarin	No	No	No
67-68-5	Dimethyl sulfoxide, anhydrous	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
26093-31-2	7-Amino-4-methylcoumarin	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
67-68-5	Dimethyl sulfoxide, anhydrous	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 05/07/2015

Additional Information About This Product: 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.