

# Safety Data Sheet

acc. to OSHA HCS


Printing date 10/21/2020

Revision date 10/21/2020

## 1 Identification

- **Product identifier**
- **Trade name: TF CREB (Phospho-Ser133) Positive Control**
- **Article number:** 10009849, 007820
- **Application of the substance / the mixture** For research use only, not for human or veterinary use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Cayman Chemical Co.  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108  
USA
- **Information department:** Product safety department
- **Emergency telephone number:**  
During normal opening times: +1 (734) 971-3335  
US/CANADA: 800-424-9300  
Outside US/CANADA: 703-741-5970

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
The product is not classified, according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** None
- **Hazard pictograms** None
- **Signal word** None
- **Hazard statements** None
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**  
 Health = 0  
Fire = 1  
Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**  

HEALTH	0	Health = 0
FIRE	1	Fire = 1
REACTIVITY	0	Reactivity = 0
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

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· <b>Dangerous components:</b>		
CAS: 56-81-5 RTECS: MA8050000	Glycerol	10.0%
CAS: 7647-14-5 RTECS: VZ4725000	Sodium chloride	2.4545%
· <b>Other ingredients</b>		
CAS: 7732-18-5 RTECS: ZC0110000	Water	61.184%
	Hela Cell Nuclear Lysate	25.0%
CAS: 67-68-5 RTECS: PV6210000	Dimethyl sulfoxide, anhydrous	0.9972%
CAS: 7365-45-9 RTECS: TL6809000	HEPES, free acid	0.2383%
CAS: 7681-49-4 RTECS: WB0350000	Sodium fluoride	0.042%
CAS: 7791-18-6 RTECS: OM2975000	Magnesium chloride, hexahydrate	0.0305%
CAS: 819-83-0 RTECS: UA0600000	disodium $\beta$ -glycerophosphate	0.0216%
CAS: 13721-39-6 RTECS: YW1120000	Sodium orthovanadate	0.0184%
CAS: 3483-12-3 RTECS: EK1610000	DL-Dithiothreitol	0.0077%
CAS: 60-00-4 RTECS: AH4025000	Ethylenediamine Tetraacetic Acid	0.0029%
CAS: 30827-99-7 RTECS: DB8877500	AEBSF	0.0024%
CAS: 9087-70-1 RTECS: YN5080000	Aprotinin	0.0001%
CAS: 26305-03-3 RTECS: SC6155000	Pepstatin A	0.0001%
CAS: 58970-76-6 RTECS: OH2915000	Ubenimex	0.0001%
CAS: 66701-25-5 RTECS: RR0390000	2-Oxiranecarboxylic acid, 3-[[[(1S)-1-[[[4-[(aminoiminomethyl)amino]butyl]amino]carbonyl]-3-methylbutyl]amino]carbonyl]-, (2S,3S	0.0001%
CAS: 103476-89-7	Leupeptin hemisulfate salt	0.0001%

## 4 First-aid measures

- **Description of first aid measures**

- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed**

May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.  
No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

56-81-5	Glycerol	45 mg/m <sup>3</sup>
67-68-5	Dimethyl sulfoxide, anhydrous	150 ppm
7365-45-9	HEPES, free acid	30 mg/m <sup>3</sup>
7681-49-4	Sodium fluoride	17 mg/m <sup>3</sup>
7791-18-6	Magnesium chloride, hexahydrate	34 mg/m <sup>3</sup>
13721-39-6	Sodium orthovanadate	0.016 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid	4.1 mg/m <sup>3</sup>

- **PAC-2:**

56-81-5	Glycerol	180 mg/m <sup>3</sup>
67-68-5	Dimethyl sulfoxide, anhydrous	290 ppm
7365-45-9	HEPES, free acid	330 mg/m <sup>3</sup>
7681-49-4	Sodium fluoride	90 mg/m <sup>3</sup>
7791-18-6	Magnesium chloride, hexahydrate	370 mg/m <sup>3</sup>
13721-39-6	Sodium orthovanadate	0.18 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid	45 mg/m <sup>3</sup>

- **PAC-3:**

56-81-5	Glycerol	1,100 mg/m <sup>3</sup>
67-68-5	Dimethyl sulfoxide, anhydrous	1,800 ppm
7365-45-9	HEPES, free acid	2,000 mg/m <sup>3</sup>
7681-49-4	Sodium fluoride	1,100 mg/m <sup>3</sup>
7791-18-6	Magnesium chloride, hexahydrate	1,600 mg/m <sup>3</sup>

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13721-39-6	Sodium orthovanadate	130 mg/m <sup>3</sup>
60-00-4	Ethylenediamine Tetraacetic Acid	200 mg/m <sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

### Components with limit values that require monitoring at the workplace:

#### 56-81-5 Glycerol

PEL	Long-term value: 15* 5** mg/m <sup>3</sup> mist; *total dust **respirable fraction
TLV	TLV withdrawn-insufficient data human occup. exp.

#### 7647-14-5 Sodium chloride

PEL	Long-term value: 10 ppm
TLV	Long-term value: 10 mg/m <sup>3</sup> , 10 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Goggles recommended during refilling.

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form: Liquid  
Color: According to product specification

- **Odor:** Characteristic
- **Odor threshold:** Not determined.

- **Formulation** 150 µl of unstimulated HeLa nuclear extract

- **pH-value at 20 °C (68 °F):** 7.9

- **Change in condition**

Melting point/Melting range: Undetermined.  
Boiling point/Boiling range: 100 °C (212 °F)

- **Flash point:** 95 °C (203 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

Lower: Not determined.  
Upper: Not determined.

- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)

- **Density:** Not determined.

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

Water: Fully miscible.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

Dynamic: Not determined.  
Kinematic: Not determined.

- **Solvent content:**

Organic solvents: 11.0 %  
Water: 61.2 %  
VOC content: 1.00 %  
10.0 g/l / 0.08 lb/gal

- **Solids content:** 2.8 %

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· **Other information** No further relevant information available.

### 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

#### ATE (Acute Toxicity Estimate)

Oral	LD50	122,224 mg/kg (rat)
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#### 56-81-5 Glycerol

Oral	LD50	12,600 mg/kg (rat)
Irritation of skin	Irritation	500 mg/24h (rabbit)
Irritation of eyes	Irritation	500 mg/24h (rabbit)
	Intraperitoneal LD50	4,420 mg/kg (rat)
	Subcutaneous LD50	100 mg/kg (rat)

#### 7647-14-5 Sodium chloride

Oral	LDLO	1,000 mg/kg (man)
	TDLO	650 ml/kg (man)
	LD50	4,000 mg/kg (mouse) 3,000 mg/kg (rat)
Inhalative	LD50	4 g/kg (mouse)
	LC50	320 mg/m <sup>3</sup> (mouse)
	TCLO	0.63 mg/m <sup>3</sup> (hmn)
Irritation of skin	LCLO	29,300 mg/m <sup>3</sup> /7h (mouse)
	Irritation	500 mg/24h (rabbit)
	Irritation of eyes	Irritation
	Intraperitoneal LD50	2,602 mg/kg (mouse)
	Subcutaneous LD50	31.6 mg/kg (rat)
	Intravenous LD50	59.5 mg/kg (rat)
	Data	15 mg/3D (hmn)
	Subcutaneous LD50	3 g/kg (mouse)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.

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- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

7681-49-4	Sodium fluoride	3
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- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:** Smaller quantities can be disposed of with household waste.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

not regulated

- **UN proper shipping name**

- **DOT, IMDG, IATA**

not regulated

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- |  |                 |
|--|-----------------|
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT, ADN, IMDG, IATA</b>  |                 |
| · <b>Class</b>   | not regulated   |
| · <b>Packing group</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Environmental hazards:</b>  | Not applicable. |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>  | not regulated   |

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· <b>Section 355 (extremely hazardous substances):</b>
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None of the ingredients is listed.
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· <b>Section 313 (Specific toxic chemical listings):</b>
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None of the ingredients is listed.
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· <b>TSCA (Toxic Substances Control Act):</b>
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7732-18-5	Water	ACTIVE
56-81-5	Glycerol	ACTIVE
7647-14-5	Sodium chloride	ACTIVE
67-68-5	Dimethyl sulfoxide, anhydrous	ACTIVE
7365-45-9	HEPES, free acid	ACTIVE
7681-49-4	Sodium fluoride	ACTIVE
819-83-0	disodium $\beta$ -glycerophosphate	ACTIVE
13721-39-6	Sodium orthovanadate	ACTIVE
3483-12-3	DL-Dithiothreitol	ACTIVE
60-00-4	Ethylenediamine Tetraacetic Acid	ACTIVE

· <b>Hazardous Air Pollutants</b>
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None of the ingredients is listed.
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· <b>Proposition 65</b>
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· <b>Chemicals known to cause cancer:</b>
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None of the ingredients is listed.
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· <b>Chemicals known to cause reproductive toxicity for females:</b>
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None of the ingredients is listed.
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· <b>Chemicals known to cause reproductive toxicity for males:</b>
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None of the ingredients is listed.
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· <b>Chemicals known to cause developmental toxicity:</b>
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None of the ingredients is listed.
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- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**

7681-49-4 Sodium fluoride

A4

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Environment protection department.

- **Contact:** -

- **Date of preparation / last revision** 10/21/2020 / -

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

- **\* Data compared to the previous version altered.**