SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product No 4174
Product name TPA (12-O-Tetradecanoylphorbol-13-Acetate)
Reach registration number This substance/mixture contains only ingredients which have been registered, or are exempt from registration, according to Regulation (EC) No. 1907/2006.

Contains

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Index No.</th>
<th>CAS No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myristic acid, 9-ester with 1,1a-alpha, 1b-beta, 4,4a, 7a-alpha, 7b, 8, 9a-decahydro-4a-beta, 7b-alpha, 9-beta, 9a-alpha-tetrahydroxy-3-(hydroxymethyl)-1, 1, 6, 8-alpha-tetramethyl-5H-cyclopropa(3,4)benz(1,2-e)azulen-5-one, 9a-acetate (90 - 100%)</td>
<td>Not Listed</td>
<td>16561-29-8</td>
</tr>
</tbody>
</table>

Formula C_{36}H_{56}O_{8}
Molecular Weight 616.83 g/mol

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

Identified uses For research use only

1.3. Details of the supplier of the safety data sheet

Importer (Applicable in EU only) Cell Signaling Technology Europe B.V.
Schuttersveld 2
2316 ZA Leiden
The Netherlands
TEL: +31 (0)71 7200 200
FAX: +31 (0)71 891 0098
Website www.cellsignal.com
E-mail Address info@cellsignal.eu

Manufacturer Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923
United States
TEL: +1 978 867 2300
FAX: +1 978 867 2400

1.4. Emergency telephone number

CHEMTREC 24 hours a day, 7 days a week, 365 days a year
+1 703 527 3887 (INTERNATIONAL) +1 800 424 9300 (NORTH AMERICA)

Europe 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008
2.2. Label elements

Signal word
Warning

Hazard statement(s)
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H351 - Suspected of causing cancer
H335 - May cause respiratory irritation

Precautionary statement(s)
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - 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 if you feel unwell
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P337 + P313 - If eye irritation persists: Get medical advice/attention
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to an approved waste disposal plant

2.3. Other hazards

For the full text of the H-phrases & EUH-phrases mentioned in this Section, see Section 16

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms
TPA;
Tetradecanoylphorbol acetate;
PMA;
Phorbol-12-myristate 13-acetate;

Formula
C_{36}H_{56}O_{8}

Chemical nature
Monoconstituent substance.
### 4174 TPA (12-O-Tetradecanoylphorbol-13-Acetate)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>EC No</th>
<th>Classification</th>
<th>REACH Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myristic acid, 9-ester with 1,1a-alpha,1b-beta,4,4a,7a-alpha,7b,8,9,9a-decahydrol-4a-beta,7b-alpha,9-beta,9a-alpha-tetrahydroxy-3-(hydroxymethyl)-1,1,6,8-alpha-tetramethyl-5H-cyclopropa(3,4)benz(1,2-e)azulen-5-one, 9a-acetate</td>
<td>16561-29-8</td>
<td>100</td>
<td>-</td>
<td>Carc. 2 (H351)</td>
<td>no data available</td>
</tr>
</tbody>
</table>

For the full text of the R-phrases mentioned in this Section, see Section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**General advice**
Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. If symptoms persist, call a physician.

**Inhalation**
Immediate medical attention is required. Move to fresh air. If not breathing, give artificial respiration. Artificial respiration and/or oxygen may be necessary. Consult a physician. Immediate medical attention is not required. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

**Skin contact**
Immediate medical attention is required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Remove and wash contaminated clothing before re-use. Wash off immediately with plenty of water. Immediate medical attention is not required.

**Eye contact**
Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing.

**Ingestion**
Do NOT induce vomiting. Immediate medical attention is required. Never give anything by mouth to an unconscious person. Drink plenty of water. Clean mouth with water. Do not induce vomiting without medical advice. Consult a physician.

**Protection of first-aiders**
Use personal protective equipment. Avoid contact with skin, eyes and clothing.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

### 4.3. Indication of any immediate medical attention and special treatment needed

**Notes to physician**
Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media**
No information available.

### 5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

### 5.3. Advice for firefighters
Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

### SECTION 6: Accidental release measures

6.1. **Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**
Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**For emergency responders**
Use personal protection recommended in Section 8.

6.2. **Environmental precautions**

Do not flush into surface water or sanitary sewer system.

6.3. **Methods and material for containment and cleaning up**

**Methods for containment**
Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Use personal protective equipment. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid dust formation. Clean contaminated surface thoroughly. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. Take precautionary measures against static discharges.

6.4. **Reference to other sections**

See Sections 8 & 13 for additional information.

### SECTION 7: Handling and storage

7.1. **Precautions for safe handling**

Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment. When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs.

7.2. **Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

7.3. **Specific end use(s)**

Use as a laboratory reagent.

### SECTION 8: Exposure controls/personal protection

8.1. **Control parameters**

8.2. **Exposure controls**

**Appropriate engineering controls**
Showers, eyewash stations, and ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**
Tightly fitting safety goggles

**Skin protection**

**Hand protection**
Impervious gloves.

**Other**
Impervious gloves. Impervious clothing. Long sleeved clothing.

**Respiratory protection**
In case of inadequate ventilation wear respiratory protection.
Environmental Exposure Controls
No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
<td>No information available</td>
</tr>
<tr>
<td>Appearance</td>
<td>Amorphous</td>
<td>No information available</td>
</tr>
<tr>
<td>Color</td>
<td>Light yellow, Colorless</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Property</td>
<td>Values</td>
<td>Remarks • Method</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>50-70 °C</td>
<td>No information available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
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<td></td>
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<tr>
<td>Solubility</td>
<td>Practically insoluble</td>
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</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
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</tr>
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</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>616.83 g/mol</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Ethanol, Dimethylsulfoxide</td>
</tr>
<tr>
<td>VOC content</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
</tr>
</tbody>
</table>

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization: Hazardous polymerization does not occur.
Hazardous reactions: None under normal processing.

10.4. Conditions to avoid

None known based on information supplied.
10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

Information on likely routes of exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>May cause irritation of respiratory tract</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Contact with eyes may cause irritation</td>
</tr>
<tr>
<td>Skin contact</td>
<td>May cause irritation</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Ingestion may cause irritation to mucous membranes</td>
</tr>
</tbody>
</table>

Symptoms

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Skin corrosion/irritation
No information available.

Serious eye damage/eye irritation
No information available.

Sensitization
No information available.

Mutagenic effects
The weight of evidence demonstrates that this material is not genotoxic.

Carcinogenic effects
Tumorigenic - neoplastic tumors at site of application.

Reproductive toxicity
No information available.

STOT - single exposure
Respiratory system.

STOT - repeated exposure
No information available.

Target Organ Effects
Skin, Eyes, Respiratory system, Gastrointestinal tract (GI).

Aspiration Hazard
No information available.

Other information
No information available.

SECTION 12: Ecological information

12.1. Toxicity

No information available.

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulation</td>
<td>No information available.</td>
</tr>
<tr>
<td>Bioconcentration factor (BCF)</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.
No information available.

### 12.6. Other adverse effects

No information available

---

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

- **Waste from residues / unused products**
  - Dispose of in accordance with local regulations.

- **Contaminated packaging**
  - Empty containers should be taken to an approved waste handling site for recycling or disposal.

- **Other information**
  - According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

---

### SECTION 14: Transport information

#### IMDG/IMO

- **14.1 UN number**
  - Not regulated

- **14.2 UN proper shipping name**
  - Not regulated

- **14.3 Transport hazard class(es)**
  - Not regulated

- **14.4 Packing group**
  - Not regulated

- **14.5 Environmental hazards**
  - None

- **14.6 Special precautions for user**
  - Not regulated

#### ADR/RID

- **14.1 UN number**
  - Not regulated

- **14.2 UN proper shipping name**
  - Not regulated

- **14.3 Transport hazard class(es)**
  - Not regulated

- **14.4 Packing group**
  - Not regulated

- **14.5 Environmental hazards**
  - None

- **14.6 Special precautions for user**
  - None

#### IATA

- **14.1 UN number**
  - Not regulated

- **14.2 UN proper shipping name**
  - Not regulated

- **14.3 Transport hazard class(es)**
  - Not regulated

- **14.4 Packing group**
  - Not regulated

- **14.5 Environmental hazards**
  - None

- **14.6 Special precautions for user**
  - None

---

### SECTION 15: Regulatory information

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

- **Candidate List of Substances of Very High Concern for Authorization Information**
  - This product does not contain Substances of Very High Concern (SVHC).

- **SEVESO Directive Information**
  - This product does not contain substances identified in the SEVESO Directive.

**International inventories**

- **TSCA 8(b)**
  - Not regulated

- **DSL/NDSL**
  - Not regulated

- **EINECS/ELINCS**
  - Not regulated
ENCS  -
IECSC - Complies
KECL  -
PICCS -
AICS  -

International inventories legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment
For this substance a chemical safety assessment has not been carried out

SECTION 16: Other information

Full text of H-Statements referred to under Sections 2 and 3
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer

Classification procedure: Expert judgment and weight of evidence determination.
Issuing Date: 2015-01-23
Revision Date: 2018-03-26

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.