



# Cell Signaling

TECHNOLOGY®

**SAFETY DATA SHEET (SDS):** According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

**Issuing Date:** 2014-07-25

**Revision Date:** 2014-09-12

**Version:** 1

## SECTION 1. Identification

### Product identifier

**Product number** 11801  
**Product name** DET1\_HUMAN 176-202 s186 Heavy L  
**UN number** UN2924

### Recommended use of the chemical and restrictions on use

**Identified uses** This product is intended for research purposes only.  
**Uses advised against** This product is not intended for use in diagnostic procedures or therapeutics.  
This product is not intended for use in humans or animals.

### Manufacturer, importer, supplier

**Manufacturer address** Cell Signaling Technology, Inc.  
3 Trask Lane  
Danvers, MA 01923  
United States  
TEL: +1 978 867 2300  
FAX: +1 978 867 2400  
**Website** www.cellsignal.com  
**Email address** support@cellsignal.com  
**Company phone number** 978-867-2300  
**Emergency telephone number** In case of emergency call CHEMTREC 1-800-424-9300

## SECTION 2. Hazard(s) identification

### Classification

This substance/mixture is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<b>Skin corrosion/irritation</b>	Category 1
<b>Serious eye damage/eye irritation</b>	Category 1
<b>Flammable liquids</b>	Category 2

### GHS Label elements, including precautionary statements



**Signal Word**  
Danger

**Hazard statement(s)**

Highly flammable liquid and vapor  
Causes severe skin burns and eye damage

**Precautionary Statement(s)**

Do not breathe dust/fume/gas/mist/vapors/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Ground/Bond container and receiving equipment  
Take precautionary measures against static discharge  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTER or doctor/physician  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Store in a well-ventilated place. Keep cool  
Dispose of contents/container to an approved waste disposal plant

**Supplementary Hazard Information**

Hazards not otherwise classified (HNOC) None.

### SECTION 3. Composition/information on ingredients

Chemical Name	CAS No	Weight %
acetonitrile	75-05-8	10-30
trifluoroacetic acid	76-05-1	0.1-1

### SECTION 4. First-aid measures

<b>Eye contact</b>	Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing.
<b>Skin contact</b>	Immediate medical attention is required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
<b>Inhalation</b>	Move to fresh air. Immediate medical attention is required. Move to fresh air in case of accidental inhalation of vapors. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
<b>Ingestion</b>	Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down this is a test. Clean mouth with water. If swallowed, do not induce vomiting - seek medical advice.

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

Symptoms of acute acetonitrile exposure include: chest pain, dizziness, weakness, tightness in the chest, nausea, vomiting, tachycardia, hypotension, short and shallow respiration, headache, restlessness and seizures.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**Advice for emergency responders**

<b>General advice</b>	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
<b>Protection of first-aiders</b>	Use personal protective equipment. Avoid contact with skin, eyes and clothing.

### SECTION 5. Fire-fighting measures

**Extinguishing media**

**Suitable Extinguishing Media** Cool containers / tanks with water spray.

**Unsuitable Extinguishing Media** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical**

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

**Explosion Data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel** Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Remove all sources of ignition. Heat, flames and sparks. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.

**Other information** Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions**

Do not allow material to contaminate ground water system. Should not be released into the environment. Prevention of fire and explosion. A vapor suppressing foam may be used to reduce vapors. Try to prevent the material from entering drains or water courses. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

**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** Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

**SECTION 7. Handling and storage****Precautions for safe handling**

Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only in an area containing flame proof equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Avoid contact with skin and eyes. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. There is a hazard associated with rags, paper or any other material used to remove spills which become soaked with product. Avoid accumulation of these: they are to be disposed off safely after use. Avoid static electricity build up with connection to earth.

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

**Technical measures/Storage conditions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Packaging material** No information available.

**Incompatible products** Incompatible with strong acids and bases. Incompatible with oxidizing agents.

## SECTION 8. Exposure controls/personal protection

### Control parameters

Occupational exposure limit values			
Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL
acetonitrile	S* TWA : 20 ppm	TWA : 40 ppm TWA : 70 mg/m <sup>3</sup> TWA : 5 mg/m <sup>3</sup> S*	IDLH : 500 ppm IDLH : 25 mg/m <sup>3</sup> TWA : 20 ppm TWA : 34 mg/m <sup>3</sup>

### Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

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

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

<b>Eye/face protection</b>	Tightly fitting safety goggles. Face-shield.
<b>Skin and body protection</b>	Wear protective gloves/clothing.
<b>Respiratory protection</b>	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
<b>Hygiene measures</b>	When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin, eyes and clothing. For environmental protection, remove and wash all contaminated protective equipment before re-use. Wear suitable gloves and eye/face protection.

## SECTION 9. Physical and chemical properties

### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Appearance</b>	Clear
<b>Odor</b>	Aromatic of ether, sweet
<b>Color</b>	Colorless
<b>Odor Threshold</b>	~170 ppm
<b>pH</b>	1.93 @ 20 °C
<b>Melting point/freezing point</b>	No information available
<b>Initial boiling point and boiling range</b>	81.6 °C @ 1 atm
<b>Flash point</b>	12.5 °C Closed cup
<b>Evaporation rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Upper flammability limit</b>	No information available.
<b>Lower flammability limit</b>	No information available.
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Relative density</b>	No information available
<b>Solubility</b>	No information available.
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient: n-octanol/water</b>	No information available
<b>Autoignition temperature</b>	No information available

<b>Decomposition temperature</b>	No information available.
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available
<b>VOC content</b>	No information available
<b>Viscosity</b>	No information available.
<b>Density</b>	No information available.

## SECTION 10. Stability and reactivity

### Reactivity

No information available.

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

<b>Hazardous reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	None under normal processing.

### Conditions to Avoid

Heat, flames and sparks. Exposure to air or moisture over prolonged periods.

### Incompatible Materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

### Hazardous Decomposition Products

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

## SECTION 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Vapours may irritate throat and respiratory system.
<b>Eye contact</b>	May cause irreversible damage to eyes.
<b>Skin contact</b>	Prolonged skin contact may cause burns.
<b>Ingestion</b>	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

### 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.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
acetonitrile	= 1327 mg/kg ( Rat )	= 1250 mg/kg ( Rabbit )	= 7500 ppm ( Rat ) 4 h
trifluoroacetic acid	-	-	= 10,000 mg/m <sup>3</sup> ( Rat )

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Symptoms</b>	Symptoms of acute acetonitrile exposure include: chest pain, dizziness, weakness, tightness in the chest, nausea, vomiting, tachycardia, hypotension, short and shallow respiration, headache, restlessness and seizures.
<b>Sensitization</b>	No information available.
<b>Mutagenic effects</b>	No information available.

<b>Carcinogenicity</b>	No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible or confirmed carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Target Organ Effects</b>	Central nervous system (CNS), Respiratory system, Kidney, Liver, Heart.
<b>Neurological effects</b>	No information available.
<b>Aspiration Hazard</b>	No information available.
<b>Other information</b>	Systemic effects are attributable to the conversion of acetonitrile to cyanide. Onset of symptoms are delayed.... because the parent molecule has no apparent intrinsic toxicity, but undergoes a two-step activation reaction mediated by cytochrome P450 enzymes (p-450IIE1).

## SECTION 12. Ecological information

### Ecotoxicity

Product does not present an aquatic toxicity hazard based on known or supplied information.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
acetonitrile	-	LC50 1640 mg/L (Pimephales promelas) 96 h	EC50 5838 mg/L (Daphnia pulex) 18 h

<b>Persistence and degradability</b>	Product is biodegradable.
<b>Bioaccumulation</b>	Not likely to bioaccumulate.
<b>Mobility</b>	No information available

Chemical Name	Octanol-Water Partition Coefficient
acetonitrile	-0.34

### Other adverse effects

No information available.

## SECTION 13. Disposal considerations

### Waste Disposal Methods

Should not be released into the environment.

### Disposal considerations

Do not empty into drains; dispose of this material and its container in a safe way.

## SECTION 14. Transport information

### DOT

<b>UN number</b>	UN2924
<b>UN proper shipping name</b>	Flammable liquids, corrosive, n.o.s. (acetonitrile, trifluoroacetic acid)
<b>Transport hazard class(es)</b>	3(8)
<b>Packing group</b>	II
<b>Special provisions</b>	IB2, T11, TP2, TP27
<b>Emergency response guide number</b>	132

### IATA

<b>UN number</b>	UN2924
<b>UN proper shipping name</b>	Flammable liquids, corrosive, n.o.s. (acetonitrile, trifluoroacetic acid)
<b>Transport hazard class(es)</b>	3(8)
<b>Packing group</b>	II
<b>ERG code</b>	3CH

### SECTION 15. Regulatory information

#### North American Inventory Listing

Chemical Name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
acetonitrile	Listed	Section 4: 1 %	Listed	Not Listed
trifluoroacetic acid	Listed	Not Listed	Listed	Not Listed

#### Canadian Workplace Hazardous Materials Information System (WHMIS) Classification

	Class B2 - Flammable Liquids Class E - Corrosive Material at >= 1%
---	---

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS No	SARA 313 - Threshold Values %
acetonitrile	75-05-8	1.0

#### SARA 311/312 Hazard Categories

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	Yes
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances	CWA - Bioaccumulative Chemicals of Concern (BCCs)
acetonitrile	Not Listed	Listed	Listed	Not Listed	Not Listed

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
acetonitrile	5000 lb	Not Listed

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

This product contains the following U.S. State Right to Know chemicals:

<b>Chemical Name</b>	<b>New Jersey</b>	<b>Massachusetts</b>	<b>Pennsylvania</b>
acetonitrile	Listed	Listed	Listed
trifluoroacetic acid	Listed	Not Listed	Not Listed

**U.S. FIFRA Label Information**

This product does not contain any substances regulated as pesticides.

**US Commerce Department - Export Administration Regulations Information**

This product does not contain any substances regulated under the Chemical Weapons Convention (CWC).

**U.S. Drug Enforcement Administration Information**

This product does not contain any substances regulated under the DEA.

**SECTION 16. Other information**

**Issuing Date:** 2014-07-25

**Revision Date:** 2014-09-12

**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.

End of Safety Data Sheet