

Safety Data Sheet (SDS) According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Issuing Date: 2018-03-14

Revision Date: 2025-01-02

Version: 2

SECTION 1. Identification

Product identifier

Product No 9974
Product name FK-506
UN number UN2811

Recommended use of the chemical and restrictions on use

Identified uses For Research Use Only. Not for Use in Diagnostic Procedures.

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
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)

Acute oral toxicity	Category 3
Reproductive toxicity	Category 2
Specific target organ toxicity - single exposure (STOT SE)	Category 3
Specific target organ toxicity - repeated exposure (STOT RE)	Category 1

GHS Label elements, including precautionary statements



Signal Word

Danger

Hazard statement(s)

Toxic if swallowed.
 Suspected of damaging fertility or the unborn child.
 May cause respiratory irritation.
 Causes damage to organs through prolonged or repeated exposure.

Precautionary Statement(s)

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe dust/fume/gas/mist/vapors/spray.
 Wash face, hands and any exposed skin thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/protective clothing/eye protection/face protection.
 IF exposed or concerned: Get medical advice/attention
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Call a POISON CENTER or doctor/physician if you feel unwell
 Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.
 Dispose of contents/container to an approved waste disposal plant.

Supplementary Hazard Information

Hazards not otherwise classified (HNOC)

Avoid contact during pregnancy and while nursing.

SECTION 3. Composition/information on ingredients

Formula C₄₄H₆₉NO₁₂
Molecular Weight 804.02

Chemical name	CAS No	Weight-%
15,19-Epoxy-3H-pyrido(2,1-c)(1,4)oxaazacyclotricosine-1,7,20,21(4H,23H)-tetrone, 5,6,8,11,12,13,14,15,16,17,18,19,24,25,26,26a-hexadecahydro-5,19-dihydroxy-3-(2-(4-hydroxy-3-methoxycyclohexyl)-14,16-dimethoxy-4,10,12,18-tetramethyl-8-(2-propenyl)-, (3S-(3R*(E(1S*,3S*,4S*)),4S*,5R*,8S*,9E,12R*,14R*,15S*,16R*,18S*,19S*,26aR*))-	104987-11-3	100

SECTION 4. First-aid measures

Eye contact Rinse thoroughly with plenty of water, also under the eyelids.
Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.
Inhalation Move to fresh air. If symptoms persist, call a physician.
Ingestion Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Respiratory irritation. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Advice for emergency responders

General advice	For further assistance, contact your local Poison Control Center.
Protection of first-aiders	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO ₂ , water spray or alcohol-resistant foam
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Specific hazards arising from the chemical

May emit toxic fumes under fire conditions.

Hazardous Combustion Products	Carbon oxides (COx), Nitrogen oxides (NOx).
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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	Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.
Other information	No information available.

Environmental precautions

See Section 12 for additional information.

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	Avoid dust formation. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly.

SECTION 7. Handling and storage

Precautions for safe handling

Avoid dust formation. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Wash thoroughly after

handling. Avoid contact during pregnancy/while nursing.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions	Keep container tightly closed in a dry and well-ventilated place. Keep in properly labeled containers. Recommended storage temperature -20 °C.
Packaging material	No information available
Incompatible products	Strong oxidizing agents

SECTION 8. Exposure controls/personal protection

Control parameters

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

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.

Eye/face protection	Tightly fitting safety goggles
Skin and body protection	Impervious clothing. Protective gloves. Rubber gloves.
Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Provide regular cleaning of equipment, work area and clothing.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Crystalline Powder
Color	White to off-white
Odor	No information available
Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No information available		
Melting point/freezing point	No information available		
Boiling point or initial boiling point and boiling range	No information available		
Flash point	No information available		
Evaporation rate	No information available		
Flammability	No information available		
Lower explosion limit	No information available		
Upper explosion limit	No information available		
Vapor pressure	No information available		
Relative vapor density	No information available		
Density and/or relative density	No information available		
Solubility	No information available.		
Solubility in other solvents	No information available.		

Partition coefficient: n-octanol/water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Viscosity, dynamic	No information available

Other information

Softening point	No information available
Molecular Weight	804.02
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

SECTION 10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Hazardous reactions	None under normal processing.
Hazardous polymerization	None under normal processing.

Conditions to Avoid

Protect from light, Excessive heat

Incompatible Materials

Strong oxidizing agents

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors: Carbon oxides (COx), Nitrogen oxides (NOx)

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation	May be harmful if inhaled. May cause irritation of respiratory tract.
Eye contact	There is no data available for this product.
Skin contact	There is no data available for this product.
Ingestion	Toxic if swallowed.

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
15,19-Epoxy-3H-pyrido(2,1-c)(1,4)oxazacyclotricosine-1,7,20,21(4H,2	134 mg/kg (Tacrolimus hydrate)	-	-

3H)-tetrone, 5,6,8,11,12,13,14,15,16,17,18,19,24, 25,26,26a-hexadecahydro-5,19-dih ydroxy-3-(2-(4-hydroxy-3-methoxycy clohexyl)-14,16-dimethoxy-4,10,12, 18-tetramethyl-8-(2-propenyl)-, (3S-(3R*(E(1S*,3S*,4S*)),4S*,5R*,8 S*,9E,12R*,14R*,15S*,16R*,18S*,1 9S*,26aR*))-			
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ATEmix (oral) 100 mg/kg

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

Symptoms	Respiratory irritation. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Sensitization	No information available.
Mutagenic effects	Did not show mutagenic effects in animal experiments.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Reproductive toxicity	Product is or contains a chemical which is a known or suspected reproductive hazard.
STOT - single exposure	Respiratory system.
STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Neurological effects	No information available.
Aspiration Hazard	No information available.

SECTION 12. Ecological information

Ecotoxicity

100% of the mixture consists of components of unknown hazards to the aquatic environment.

Persistence and degradability	No information available.
Mobility	No information available.
Bioaccumulation	No information available.

Other adverse effects

No information available.

SECTION 13. Disposal considerations

Waste Disposal Methods

Dispose of in accordance with all applicable national environmental laws and regulations.

Disposal considerations

Do not empty into drains; dispose of this material and its container in a safe way. Dispose of wastes in an approved waste disposal facility.

SECTION 14. Transport information

This material is subject to regulation as a hazardous material for shipping:

DOT

UN number UN2811
UN proper shipping name Toxic solid, organic, n.o.s. (FK-506)
Transport hazard class(es) 6.1
Packing group III

IATA


UN number UN2811
UN proper shipping name Toxic solid, organic, n.o.s. (FK-506)
Transport hazard class(es) 6.1
Packing group III

SECTION 15. Regulatory information

North American Inventory Listing

All components of this product are NOT included on the Toxic Substance Control Act (TSCA) Inventory, DSL, or NDSL. All components of this product are NOT included on DSL or NDSL.

Canadian Workplace Hazardous Materials Information System (WHMIS) Classification

	Class D1B - Toxic Material at $\geq 1\%$ Class D2A - Very Toxic Material at $\geq 0.1\%$
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SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

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

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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