



Cell Signaling

TECHNOLOGY®

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

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SECTION 1. Identification

Product identifier

Product No. 12520
Product name Vorinostat (SAHA)
UN number UN3077
Other means of identification 12520S

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.
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Danvers, MA 01923
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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 chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Germ cell mutagenicity	Category 2
Reproductive toxicity	Category 1B

GHS Label elements, including precautionary statements



Signal Word
Danger

Hazard statement(s)

Suspected of causing genetic defects
May damage fertility or the unborn child

Precautionary Statement(s)

Obtain special instructions before use
Use personal protective equipment as required
IF exposed or concerned: Get medical advice/attention.
Dispose of contents/container to an approved waste disposal plant

Supplementary Hazard Information

Hazards not otherwise classified (HNOC) Very toxic to aquatic life.

Unknown Acute Toxicity 100% of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3. Composition/information on ingredients

Formula	C ₁₄ H ₂₀ N ₂ O ₃
Molecular Weight	264.32
Chemical nature	Monoconstituent substance
Synonyms	Vorinostat; N-Hydroxy-N'-phenyloctanediamide; Suberanolhydroxamic acid; Octanediamide, N-hydroxy-N'-phenyl-; Zolinza

Chemical Name	CAS No.	Weight %
N-hydroxy-N'-phenyloctanediamide	149647-78-9	60-100

SECTION 4. First-aid measures

Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Inhalation	Move to fresh air.
Ingestion	Clean mouth with water and afterwards drink plenty of water.

Most important symptoms and effects, both acute and delayed

Diarrhea, nausea, anorexia, weight decrease, vomiting, constipation, fatigue, chills, thrombocytopenia, anemia, dysgeusia and dry mouth.

Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically. Remove unabsorbed material from the gastrointestinal tract, employ clinical monitoring, and institute supportive therapy, if required. It is not known if vorinostat is dialyzable.
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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.
- Unsuitable Extinguishing Media** CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

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.
- Other information** No information available.

Environmental precautions

Do not flush into surface water or sanitary sewer system.

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 and collect in suitable container for disposal. Avoid dust formation. Clean contaminated surface thoroughly.

SECTION 7. Handling and storage

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice.

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** None known based on information supplied.

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	Safety glasses with side-shields.
Skin and body protection	Wear protective gloves/clothing.
Respiratory protection	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.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Crystalline powder
Odor	No information available
Color	White to off-white
Odor Threshold	No information available
pH	6.6 saturated water solution (9.2 pKa)
Melting point/freezing point	151-163 °C
Initial boiling point and boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Upper flammability limit	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Solubility	Practically insoluble
Solubility in other solvents	66 mg/mL in Dimethyl sulfoxide (DMSO); soluble in Ethanol (EtOH) @ 2 mg/mL with slight warming.
Partition coefficient: n-octanol/water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Molecular Weight	264.32
VOC content	No information available
Viscosity	No information available
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

No information available.

Incompatible Materials

None known based on information supplied.

Hazardous Decomposition Products

None known based on information supplied.

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation	There is no data available for this product.
Eye contact	There is no data available for this product.
Skin contact	There is no data available for this product.
Ingestion	There is no data available for this product.

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.

Unknown Acute Toxicity 100% of the mixture consists of ingredient(s) of unknown acute toxicity.

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

Symptoms	Diarrhea, nausea, anorexia, weight decrease, vomiting, constipation, fatigue, chills, thrombocytopenia, anemia, dysgeusia and dry mouth.
Corrosivity	No information available.
Sensitization	No information available.
Mutagenic effects	Mutagenic in vitro in the bacterial reverse mutation assays (AMES test). Caused chromosomal aberrations in vitro in Chinese hamster ovary (CHO) cells. Increased the incidence of micro-nucleated erythrocytes when administered to mice (Mouse Micronucleus Assay).
Carcinogenicity	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.
Reproductive toxicity	This material is classified as a Pregnancy Category D: Positive evidence of risk.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Neurological effects	No information available.
Aspiration Hazard	No information available.

SECTION 12. Ecological information

Ecotoxicity

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
N-hydroxy-N'-phenyloctanediamide	EC50 0.080 mg/l (Selenastrum capricornutum) 96 h	LC50 10 mg/l (Sheepshead minnow) 96 h	LC50 7.4 mg/l (Mysidopsis juniae) 96 h

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

SECTION 14. Transport information

DOT

UN number UN3077
UN proper shipping name Environmentally hazardous substance, solid, n.o.s. (N-hydroxy-N'-phenyloctanediamide)
Transport hazard class(es) 9
Packing Group III
Special precautions for user 146, 335, A112, B54, B120, IB8, IP3, N20, T1, TP33
Emergency Response Guide Number 171

IATA

UN number UN3077
UN proper shipping name Environmentally hazardous substance, solid, n.o.s. (N-hydroxy-N'-phenyloctanediamide)
Transport hazard class(es) 9
Packing Group III
Special precautions for user A158, A179, A97

IMDG/IMO

UN number UN3077
UN proper shipping name Environmentally hazardous substance, solid, n.o.s. (N-hydroxy-N'-phenyloctanediamide)
Transport hazard class(es) 9
Packing group III
EmS No. F-A, S-F
Special precautions for user 274, 335, 966, 967

SECTION 15. Regulatory information

North American Inventory Listing

Component	TSCA	DSL	NDSL
N-hydroxy-N'-phenyloctanediamide 149647-78-9 (60-100)	Not Listed	Not Listed	Not Listed

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	No
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. EPA Label Information

This product does not contain any substances regulated as pesticides.

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