Safety Data Sheet (SDS) According to the REACH Regulation (EC) No. 1907/2006

Issuing Date: 2014-03-14 **Revision Date:** 2024-02-23 **Version:** 3

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

1.1. Product identifier

Product No 12520

Product name Vorinostat (SAHA)

Contains

Chemical name	Index No.	CAS No
N-hydroxy-N'-phenyloctanediamide (60-100)	-	149647-78-9

Formula $C_{14}H_{20}N_2O_3$
Molecular Weight 264.32
Other means of identification 12520S

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

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

1.3. Details of the supplier of the safety data sheet

Importer
Cell Signaling Technology Europe B.V.
Dellaertweg 9b
2316 WZ Leiden
The Netherlands
TEL: +31 (0)71 7200 200
FAX: +31 (0)71 891 0019

Manufacturer
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
E-mail Address info@cellsignal.eu

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

Germ cell mutagenicity	Category 2 - (H341)
Reproductive toxicity	Category 1B - (H360)
Acute aquatic toxicity	Category 1 - (H400)

2.2. Label elements

Signal word
Danger

Hazard statement(s)
H341 - Suspected of causing genetic defects.
H360 - May damage fertility or the unborn child.
H400 - Very toxic to aquatic life.

Precautionary statement(s)
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P391 - Collect spillage.
P308 + P313 - IF exposed or concerned: Get medical advice/attention.
P405 - Store locked up.
P501 - Dispose of contents/container to an approved waste disposal plant.

2.3. Other hazards

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

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 Vorinostat; N-Hydroxy-N'-phenyloctanediamide; Suberanilohydroxamic acid; Octanediamide, N-hydroxy-N'-phenyl-; Zolinza
Formula $C_{14}H_{20}N_2O_3$
Chemical nature Monoconstituent substance

Chemical name	CAS No	Weight-%	EC No	Classification (1272/2008)	REACH Registration Number
N-hydroxy-N'-phenyloctanediamide	149647-78-9	60-100	-	Muta. 2 (H341) Repr. 1B (H360) Aquatic Acute 1 (H400)	no data available

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Use first aid treatment according to the nature of the injury. When symptoms persist or in all cases of doubt seek medical advice.

Inhalation	Move to fresh air.
Skin contact	Wash skin with soap and water.
Eye contact	Rinse thoroughly with plenty of water, also under the eyelids.
Ingestion	Clean mouth with water and afterwards drink plenty of water.

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

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

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	Evacuate personnel to safe areas. Ensure adequate ventilation.
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.

6.4. Reference to other sections

See Sections 8 & 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

7.3. Specific end use(s)

Use as a laboratory reagent.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The product does not contain any hazardous materials with occupational exposure limits established.

8.2. Exposure controls

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

Individual protection measures, such as personal protective equipment

Eye/face protection	Safety glasses with side-shields.
Skin protection	Wear protective gloves and protective clothing
Hand protection	Impervious gloves.
Other	Wear suitable protective 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

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

Property	**Values**	**Remarks • Method**
pH	6.6	saturated water solution (9.2 pKa)
Melting point/freezing point	151-163 °C	
Boiling point or initial boiling point and boiling range	No information available	No information available
Flash point	No information available	No information available.
Evaporation rate	No information available	No information available
Flammability	No information available	No information available
Upper/lower flammability or explosive limits	Lower: No information available	No information available
Vapor pressure	No information available	No information available
Relative vapor density	No information available	No information available
Density and/or relative density	No information available	No information available
Solubility	Practically insoluble	No information available

Partition coefficient: n-octanol/water	No information available	No information available
Autoignition temperature	No information available	No information available
Decomposition temperature	No information available	No information available.
Viscosity	No information available	No information available
Explosive properties	No information available	No information available
Oxidizing properties	No information available	No information available

9.2. Other information

Softening point	No information available
Molecular Weight	264.32
Solubility in other solvents	No information available
VOC content	No information available
Liquid Density	No information available

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 hazard classes as defined in Regulation (EC) No 1272/2008

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.

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.
Symptoms	Diarrhea, nausea, anorexia, weight decrease, vomiting, constipation, fatigue, chills, thrombocytopenia, anemia, dysgeusia and dry mouth.
Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Sensitization	No information available.
Mutagenic effects	Mutagenic in vitro in the bacterial reverse mutation assays (AMES test). Genotoxic in some animal in vitro and in vivo studies.
Carcinogenicity	No information available.
Reproductive toxicity	Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental toxicity	May be a developmental hazard based on animal data.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration Hazard	No information available.

11.2. Information on other hazards

No information available.

SECTION 12: Ecological information

12.1. Toxicity

No information available.

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

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential

Bioaccumulation	No information available.
Bioconcentration factor (BCF)	No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors

12.7. 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	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	UN3077
14.2 UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (N-hydroxy-N'-phenyloctanediamide)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	None
14.7 Maritime transport in bulk according to IMO instruments	Not regulated

ADR/RID

14.1 UN number	UN3077
14.2 UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (N-hydroxy-N'-phenyloctanediamide)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	None

IATA

14.1 UN number	UN3077
14.2 UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (N-hydroxy-N'-phenyloctanediamide)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazards	Yes
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)	-

DSL/NDSL	-
EINECS/ELINCS	-
ENCS	-
IECSC	-
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

H341 - Suspected of causing genetic defects
H360 - May damage fertility or the unborn child
H400 - Very toxic to aquatic life

Classification procedure: Expert judgment and weight of evidence determination.
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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.