



# Cell Signaling

TECHNOLOGY®

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

**Issuing Date:** 2014-03-18

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**Version:** 1

## SECTION 1. Identification

### Product identifier

**Product No.** 12616  
**Product name** Vandetanib  
**UN number** UN3077  
**Other means of identification** 12616S

### 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  
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 chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<b>Acute toxicity - Oral</b>	Category 4
<b>Reproductive toxicity</b>	Category 1B
<b>Specific target organ toxicity - repeated exposure (STOT RE)</b>	Category 2

### GHS Label elements, including precautionary statements



**Signal Word**

Danger

**Hazard statement(s)**

Harmful if swallowed  
May damage fertility or the unborn child  
May cause damage to organs through prolonged or repeated exposure

**Precautionary Statement(s)**

Do not handle until all safety precautions have been read and understood  
Do not breathe dust  
Avoid release to the environment  
Use personal protective equipment as required  
Get medical advice/attention if you feel unwell  
Dispose of contents/container to an approved waste disposal plant

**Supplementary Hazard Information**

**Hazards not otherwise classified (HNOC)** Very toxic to aquatic life with long lasting effects. May form combustible dust concentrations in air.

### SECTION 3. Composition/information on ingredients

**Formula** C<sub>22</sub>H<sub>24</sub>BrFN<sub>4</sub>O<sub>2</sub>  
**Molecular Weight** 475.35  
**Chemical nature** Monoconstituent substance  
**Synonyms** Vandetanib; Caprelsa; Zactima; ZD6474

Chemical Name	CAS No.	Weight %
N-(4-bromo-2-fluorophenyl)-6-methoxy-7-[(1-methylpiperidin-4-yl) methoxy]quinazolin-4-amine	443913-73-3	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** Rinse mouth. Never give anything by mouth to an unconscious person.

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

Diarrhea, rash, acne, nausea, headache, feeling tired, loss of appetite, and stomach (abdominal) pain.

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

**Notes to physician** Exposure may cause a serious skin reaction, called Stevens-Johnson syndrome or other serious skin reactions which may be life threatening. May cause a breathing problem called interstitial lung disease that can lead to death. Torsades de pointes, ventricular tachycardia and sudden deaths have been reported in patients administered vandetanib.

**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.

<b>Eye/face protection</b>	Safety glasses with side-shields.
<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>	Do not eat, drink or smoke when using this product.

## SECTION 9. Physical and chemical properties

**Information on basic physical and chemical properties**

<b>Physical state</b>	Solid
<b>Appearance</b>	Crystalline powder
<b>Odor</b>	No information available
<b>Color</b>	White to off-white
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	221-234 °C
<b>Initial boiling point and boiling range</b>	No information available
<b>Flash point</b>	No information available
<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>	Practically insoluble
<b>Solubility in other solvents</b>	30 mg/mL in Dimethyl sulfoxide (DMSO); soluble in Ethanol (EtOH) @ 10 mg/mL with slight warming.
<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>Molecular Weight</b>	475.35
<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**

Dust formation.

**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**

<b>Inhalation</b>	There is no data available for this product.
<b>Eye contact</b>	There is no data available for this product.
<b>Skin contact</b>	There is no data available for this product.
<b>Ingestion</b>	Harmful if swallowed. Target Organ Effects.

**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
N-(4-bromo-2-fluorophenyl)-6-methoxy-7-[(1-methylpiperidin-4-yl)methoxy]quinazolin-4-amine	= LD 2000 mg/kg ( Rat )	-	-

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

<b>Symptoms</b>	Diarrhea, rash, acne, nausea, headache, feeling tired, loss of appetite, and stomach (abdominal) pain.
<b>Corrosivity</b>	No information available.
<b>Sensitization</b>	No information available.
<b>Mutagenic effects</b>	Negative in the Ames test.
<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>	This material is classified as a Pregnancy Category D: Positive evidence of risk.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	Kidney, Liver, Gastrointestinal tract (GI), Skin.
<b>Neurological effects</b>	No information available.
<b>Aspiration Hazard</b>	No information available.

## SECTION 12. Ecological information

**Ecotoxicity**

Very toxic to aquatic life with long lasting effects

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
N-(4-bromo-2-fluorophenyl)-6-methoxy-7-[(1-methylpiperidin-4-yl)methoxy]quinazolin-4-amine	ErC50 0.303 mg/l (Green algae) 72 h	LC50 2.5 mg/l (Rainbow trout) 96 h	-

**Persistence and degradability** Not readily biodegradable.  
**Bioaccumulation** Not likely to bioaccumulate.  
**Mobility** The substance has high mobility in soil at pH1 (log Koc=2.1)

**Other adverse effects**

Evidence of inhibition to aerobic process at 10-100mg/l (EC20).

### 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. (Vandetanib)  
**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. (Vandetanib)  
**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. (Vandetanib)  
**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-(4-bromo-2-fluorophenyl)-6-methoxy-7-[(1-methylpiperidin-4-yl)methoxy]quinazolin-4-amine 443913-73-3 ( 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	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. 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