



SAFETY DATA SHEET (SDS): According to the OSHA Hazard Communication Standard 29 CFR 1910.1200
Issuing Date: 2015-01-14 **Revision Date:** 2015-01-14

Version: 2

SECTION 1. Identification

Product identifier

Product number 12121
Product name Lapatin
Other means of identification 12121S

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)

Reproductive toxicity	Category 1B
Specific target organ toxicity - repeated exposure (STOT RE)	Category 1

GHS Label elements, including precautionary statements



Signal Word
Danger

Hazard statement(s)
May damage fertility or the unborn child
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
 Use personal protective equipment as required
 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
 IF exposed or concerned: Get medical advice/attention
 Store locked up
 Dispose of contents/container to an approved waste disposal plant

Supplementary Hazard Information

Hazards not otherwise classified (HNOC) May cause long lasting harmful effects to aquatic life

SECTION 3. Composition/information on ingredients

Formula	C ₂₉ H ₂₆ ClFN ₄ O ₄ S (C ₇ H ₈ O ₃ S) ₂
Molecular Weight	925.46 g/mol
Chemical nature	Monoconstituent substance
Synonyms	Lapatinib Ditosylate; Tykerb; 4-Quinazolinamine, N-(3-chloro-4-((3-fluorophenyl)methoxy)phenyl)-6-(5-(((2-(methylsulfonyl)ethyl)amino)methyl)-2-furanyl), bis(4-methylbenzenesulfonate), monohydrate

Chemical Name	CAS No	Weight %
N-[3-chloro-4-{ [3-(fluorophenyl)meth]oxy} phenyl]-6-[5-({ [2-(methylsulfonyl)ethyl]amino} methyl)-2-furanyl]-4-quinazolinamine bis(4-methylbenzenesulfonate)	388082-78-8	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

Common symptoms include: diarrhea, nausea, rash, vomiting, tiredness or weakness, mouth sores, loss of appetite, indigestion, unusual hair loss or thinning, nose bleeds, headache, dry skin, itching and nail disorders such as nail bed changes, nail pain, infection and swelling of the cuticles.

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.
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

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	Pick up and transfer to properly labeled containers.

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	Powder
Odor	No information available
Color	Yellow
Odor Threshold	No information available
pH	No information available
Melting point/freezing point	241-252 °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	No information available
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	925.46 g/mol
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	Inhalation of particulates may cause mechanical irritation to upper respiratory tract.
Eye contact	Contact with eyes may cause mechanical irritation.
Skin contact	Contact with skin may cause mild irritation.
Ingestion	May cause adverse liver effects. May cause adverse cardiac effects. May cause gastrointestinal discomfort if consumed in large amounts.

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.

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

Symptoms	Common symptoms include: diarrhea, nausea, rash, vomiting, tiredness or weakness, mouth sores, loss of appetite, indigestion, unusual hair loss or thinning, nose bleeds, headache, dry skin, itching and nail disorders such as nail bed changes, nail pain, infection and swelling of the cuticles.
Sensitization	No information available.
Mutagenic effects	Did not show mutagenic effects in animal experiments.
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.
Developmental toxicity	Lapatinib was studied for effects on embryo-fetal development in pregnant rats and rabbits given oral doses of 30, 60, and 120 mg/kg/day. Minor anomalies (left-sided umbilical artery, cervical rib, and precocious ossification) occurred in rats at the maternally toxic dose of 120 mg/kg/day. In rabbits, lapatinib was associated with decreased fetal body weights and minor skeletal variations at 60 and 120 mg/kg/day.
Teratogenicity	In a study where pregnant rats were dosed with lapatinib during organogenesis and through lactation, at a dose of 120 mg/kg/day, 91% of the pups had died by the fourth day after birth, while 34% of the 60 mg/kg/day pups were dead.
STOT - single exposure	No information available.
STOT - repeated exposure	May cause disorder and damage to the: Liver, Heart, Respiratory system, Gastrointestinal tract (GI), Skin.
Neurological effects	No information available.
Aspiration Hazard	No information available.

SECTION 12. Ecological information

Ecotoxicity

May cause long lasting harmful effects to aquatic life

Persistence and degradability	Not readily biodegradable. 32% 28 day period.
Bioaccumulation	Material may have some potential to bioaccumulate.

Mobility

Is not likely mobile in the environment due its low water solubility

Chemical Name	Octanol-Water Partition Coefficient
N-[3-chloro-4-{ [3-(fluorophenyl)methyl]oxy} phenyl)-6-[5-({ [2-(methylsulfonyl)ethyl]amino} methyl)-2-furanyl]-4-quinazolinamine bis(4-methylbenzenesulfonate)	4.65 - 6.12

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

This material is not subject to regulation as a hazardous material for shipping.

SECTION 15. Regulatory information**North American Inventory Listing**

Chemical Name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
N-[3-chloro-4-{ [3-(fluorophenyl)methyl]oxy} phenyl)-6-[5-({ [2-(methylsulfonyl)ethyl]amino} methyl)-2-furanyl]-4-quinazolinamine bis(4-methylbenzenesulfonate)	Not Listed	Not Listed	Not Listed	Not Listed

Canadian Workplace Hazardous Materials Information System (WHMIS) Classification

	Class D2A - Very Toxic Material at >= 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	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. 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