Safety Data Sheet

SECTION 1: Identification

Contact information

General

Deciphera Pharmaceuticals Inc.
200 Smith St. Waltham
MA 02451
Tel: 781-209-6400 (8:30 AM to 5:00 PM Eastern)
Fax: 785-830-2150
Email: SDSInformation@Deciphera.com

Emergency telephone number
INFOTRAC, Inc.
1-800-535-5053

Product identifier	Ripretinib 50 mg tablets
Synonyms	DCC-2618; DP49; DP-4851; 1-(4-Bromo-5-[1-ethyl-7-(methylamino)-2-oxo-1,2-dihydro-1,6-naphthyridin-3-yl]-2-fluorophenyl]-3-phenylurea.
Trade name	QINLOCK™
Chemical family	Mixture - contains urea-substituted naphthyridine
Recommended uses and restrictions	Bulk formulated pharmaceutical mixture OR Formulated pharmaceutical product/mixture packaged in final form for patient use; used/being investigated for the treatment of cancer.
Note	This SDS is written to address potential worker health and safety issues associated with the handling of the formulated product/mixture. Workers manufacturing this product/mixture should consult the SDS of each hazardous ingredient for hazard information and handling recommendations. This SDS will be revisited if more data become available.

SECTION 2: Hazard(s) identification

Classification of the substance or mixture

The classification and labeling listed below is for bulk drug product.

Reproductive toxicity Category 2
Suspected of damaging fertility. Suspected of damaging the unborn child.
Specific target organ toxicity (repeated exposure) Category 1
Causes damage to organs (hematopoietic system, Skin) through prolonged or repeated exposure

Label elements

GHS Hazard pictograms

GHS Signal word
Danger

GHS Hazard statements
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.
H372 - Causes damage to organs (hematopoietic system, Skin) through prolonged or repeated exposure

GHS Precautionary statements
P201 - Obtain special instructions before use. P260 - Do not breathe dust. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P308+P313 - If exposed or concerned: Get medical advice/attention. P405 - Store locked up. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Other hazards

Ripretinib is a kinase inhibitor. Key clinical effects include increased levels of lipase, alopecia, hand-foot syndrome, fatigue, myalgia, anemia, and gastrointestinal (GI) upset (decreased appetite, abdominal pain, nausea, constipation, and diarrhea).
Based on its mechanism of action and adverse effects observed in animal studies, ripretinib may adversely affect rapidly dividing cells, such as those of sperm or a fetus. As such, the potential for this compound to cause reproductive and/or developmental toxicity cannot be excluded.

Note

This mixture is classified as hazardous under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA).

SECTION 3: Composition/Information on ingredients

Ingredient	CAS number	EINECS/ELINCS#	Amount	GHS classification
Microcrystalline cellulose	9004-34-6	232-674-9	20 – 40 %	Not classified
Ripretinib	1442472-39-0	N/A	5 – 20 %	Repr. 2, H361fd STOT RE 1, H372
Silicon dioxide (amorphous)	7631-86-9	231-545-4	0.5 – 2 %	Not classified
Magnesium stearate	557-04-0	209-150-3	0.5 – 2 %	Not classified

Note

The substance(s) listed above are considered hazardous. The remaining components are not hazardous and/or present at amounts below reportable limits. Cellulose, silicon dioxide and magnesium stearate are included because they have OELs and are present at or above 1%. Amounts are listed as ranges; the exact percentage of composition is withheld as a trade secret. See Section 16 for full text of GHS classifications.

SECTION 4: First-aid measures

Description of first aid measures

Immediate medical attention and special treatment, if necessary

Yes.

Inhalation

Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.

Skin contact

Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.

Eye contact

If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.

Ingestion

If swallowed, call a physician immediately. Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.

Most Important Symptoms/Effects

Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively.

Expected Symptoms/Effects, Acute and Delayed

See Sections 2 and 11

SECTION 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media

Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.

Specific hazards arising from the chemical

No information identified. May emit carbon monoxide, carbon dioxide, oxides of chlorine, nitrogen, sulfur and other chlorine-, nitrogen-, and sulfur-containing compounds.

Fire hazard

No information identified.

Explosion hazard

No information identified. High concentrations of finely divided organic particles can explode if ignited.

Special protective equipment and precautions for fire-fighters

Firefighting instructions

In case of fire in the surroundings: use the appropriate extinguishing agent. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Decontaminate all equipment after use.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Protective equipment

If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated.

Emergency procedures

Do not breathe dust.

Environmental precautions

Do not empty into drains. Avoid release to the environment.

Methods and material for containment and cleaning up

Methods for cleaning up	If tablets are spilled, scoop up and dispose of in a manner that is compliant with federal, state or local laws. If tablets are crushed/broken, DO NOT RAISE DUST. Surround spill or powder with absorbents and place a damp cloth or towel over the area to minimize entry of powder into the air. Scoop up broken pieces. Add excess liquid to allow the material to enter solution. Capture remaining liquid onto spill absorbents. Place spill materials into a leak-proof container suitable for disposal in accordance with applicable waste disposal regulations (see Section 13). Decontaminate the area twice.
Other information	Dispose of materials or solid residues at an authorized site.
Reference to other sections	See Sections 8 and 13 for more information.

SECTION 7: Handling and storage

Precautions for safe handling	If tablets are crushed or broken, dust containing drug substance may be released. Minimize dust generation and accumulation. Follow recommendations for handling bulk formulated/packaged pharmaceutical agents (i.e, use of engineering controls and/or other personal protective equipment if needed). Avoid contact with eyes, skin, and other mucous membranes. Wash thoroughly after handling. Do not breathe dust.

Conditions for safe storage, including any incompatibilities

Storage conditions	Protect from sunlight. Store locked up.
Storage temperature	20 – 25 °C With excursion permitted to 15-30 °C
Specific end use(s)	Pharmaceuticals.

SECTION 8: Exposure controls/personal protection

Control parameters/Occupational Exposure Limits

Name	Issuer	Value
Ripretinib	Deciphera	40 µg/m³ OEL TWA
Microcrystalline cellulose	ACGIH TWA	10 mg/m³
	NIOSH REL (TWA)	10 mg/m³ (total dust)
	OSHA PEL (TWA)	15 mg/m³ (Total dust)
Silicon dioxide (amorphous)	NIOSH REL (TWA)	6 mg/m³
	OSHA PEL (TWA)	80 mg/m³ (per % silica total dust)
	OSHA PEL (TWA)	20 mppcf
Magnesium stearate	ACGIH TWA	10 mg/m³ (stearates)

Appropriate engineering controls	If tablets are crushed or broken, or if handling bulk formulation: Control exposures to below the OEL (for the active ingredient(s) if available). Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at dust-generating points. Use specifically designed and engineered local exhaust ventilation (LEV) and/or enclosure at dust-generating points and for high dust-generating operations. Limited open handling allowable for low dust-generating operations. Emphasis is placed on closed material transfer through direct connections, dust control and containment using LEV, certified downflow booths, glove bags, process containment via intermediate bulk containers (IBCs) with split butterfly valves (SBVs) and/or isolator technology.
Respiratory protection	If tablets are crushed or broken, or if handling bulk formulation: Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. At a minimum, a tight-fitting full-face respirator with HEPA filters is required when performing dust- generating operations. A powered air-purifying respirator (PAPR) with HEPA filters and head cover is required for spill cleanup.
Hand protection	If tablets are crushed or broken, or if handling bulk formulation: Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.
Eye protection	Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.
Skin and body protection	Wear disposable coveralls appropriate to the task, booties, and safety glasses with side shields. Ensure gloves are protective against solvents in use. Protective garments (coveralls, disposable coveralls, lab coats) are not to be worn in common areas (e.g., cafeterias) or out-of-doors. Employees must be trained in proper gowning and degowning practices.
Other protective measures	Wash hands in the event of contact with this substance, especially before eating, drinking or smoking. Protective equipment is not to be worn outside the work area (e.g., in common areas or out-of-doors).
Environmental exposure controls	Avoid release to the environment and operate within closed systems wherever practicable. Air and liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.

SECTION 9: Physical and chemical properties

Physical state	Solid
Appearance	Uncoated tablet.
Formula	For API: $C_{24}H_{21}BrFN_5O_2$
Molecular mass	For API: 510.36 g/mol
Color	Off-white
Odor	No data available
pH	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Relative evaporation rate (butyl acetate=1)	No data available
Flammability (solid, gas)	No data available
Vapor pressure	No data available
Relative vapor density at 20 °C	No data available
Relative density	No data available
Solubility	No data available
Log Pow	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosion limits	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reactions known under normal conditions of use.
Conditions to avoid	(See section 7: Handling and Storage).
Incompatible materials	No information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

Note	No data on product formulation. The following information is for ripretinib and other ingredients, where applicable.
Likely routes of exposure	May be absorbed by inhalation, skin contact and ingestion.

Toxicological information

Acute toxicity

Component	Type	Dose
Ripretinib	No data available	No data available
Microcrystalline cellulose	LD50 oral rat	> 5000 mg/kg
	LD50 dermal rabbit	> 2000 mg/kg
	LC50 inhalation rat	> 5800 mg/m³
Silicon dioxide (amorphous)	LD50 oral rat	> 5000 mg/kg
	LD50 dermal rabbit	> 2000 mg/kg
	LC50 inhalation rat	> 58.8 mg/l/4h
Magnesium stearate	LD50 oral rat	> 1000 mg/kg
	LC50 inhalation rat	> 2000 mg/m³

Serious eye damage/irritation	No data available
Skin corrosion/irritation	No data available
Sensitization	No data available
STOT-single exposure	No data available
STOT-repeated exposure	Ripretinib: Duration: 13 weeks; Species: Rat; Route: Oral; Dose: LOAEL = 100 mg/kg/day; Effects: Skin toxicity (lesions and hair loss), teeth discoloration, GI effects, reproductive organ toxicity in males. Duration: 13 weeks; Species: Dog; Route: Oral; Dose: LOAEL = 2.5 mg/kg/day; Effects: Skin toxicity (lesions and hair loss).
Reproductive toxicity	Ripretinib: Species: Rabbit; Route: Oral; Dose: LOAEL = 150 mg/kg/day; Effects: Early resorptions and pregnancy loss with maternal toxicity.
Developmental toxicity	Ripretinib: Species: Rat; Route: Oral; Dose: LOAEL = 20 mg/kg/day; Effects: Visceral and skeletal malformations with maternal toxicity.
Genotoxicity	Ripretinib: *In vitro:* Bacterial reverse mutation assay (e.g. Ames test): negative Micronucleus study in human peripheral blood lymphocytes: negative *In vivo:* Rat bone marrow micronucleus assay: negative Rat liver DNA strand breaks assay: negative
Carcinogenicity	No data available
Aspiration hazard	No data available
Experience with humans	See "Section 2 - Other Hazards".

Silicon dioxide (amorphous) (7631-86-9)	
IARC group	3 - Not classifiable

SECTION 12: Ecological information

Toxicity

Component	Type	Concentration
Ripretinib	No data available	No data available
Microcrystalline cellulose	No data available	No data available
Silicon dioxide (amorphous)	LC50 fish 1	> 10000 mg/l
	EC50 crustacea	> 1000 mg/l
Magnesium stearate	No data available	No data available

Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT assessment	No data available
Other adverse effects	No data available
Note	The environmental characteristics of this product/mixture have not been fully investigated. Releases to the environment should be avoided.

SECTION 13: Disposal considerations

Waste treatment methods	Used product should be disposed of according to local, state, and federal regulations. All wastes containing the material should be properly labeled. Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g, appropriately permitted chemical waste incinerator. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g, appropriately permitted municipal or on-site wastewater treatment facility.

SECTION 14: Transport information

Transport	Based on the available data, this mixture is not regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.
UN number	None assigned.
UN proper shipping name	None assigned.
Transport hazard class(es) (DOT)	None assigned.

Packing group	None assigned.
Marine pollutant	Based on the available data, this mixture is not regulated as an environmental hazard or a marine pollutant.
Special transport precautions	Avoid release to the environment.
Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This SDS generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local or regional authorities for more information.
Chemical safety assessment	No chemical safety assessment has been carried out
TSCA	Drugs are exempt from TSCA.
SARA Section 313 - Emission Reporting	This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
California Proposition 65	California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm
Additional information	No additional information available

SECTION 16: Other information

Full text of H phrases and GHS classification	Repr. 2 - Reproductive toxicity Category 2. STOT RE 1 - Specific target organ toxicity (repeated exposure) Category 1. H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child. H372 - Causes damage to organs through prolonged or repeated exposure.
Data sources	Information from published literature and internal company data.
Abbreviations and acronyms	ACGIH - American Conference of Governmental Industrial Hygienists; ADR/RID - European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail; AIHA - American Industrial Hygiene Association; CAS# - Chemical Abstract Services Number; CLP - Classification, Labelling, and Packaging of Substances and Mixtures; DNEL - Derived No Effect Level; DOT - Department of Transportation; EINECS - European Inventory of New and Existing Chemical Substances; ELINCS - European List of Notified Chemical Substances; EU - European Union; GHS - Globally Harmonized System of Classification and Labeling of Chemicals; IARC - International Agency for Research on Cancer; IDLH - Immediately Dangerous to Life or Health; IATA - International Air Transport Association; IMDG - International Maritime Dangerous Goods; LOEL - Lowest Observed Effect Level; LOAEL - Lowest Observed Adverse Effect Level; NIOSH - The National Institute for Occupational Safety and Health; NOEL - No Observed Effect Level; NOAEL - No Observed Adverse Effect Level; NTP - National Toxicology Program; OEL - Occupational Exposure Limit; OSHA - Occupational Safety and Health Administration; PBT - Persistent, Bioaccumulative, and Toxic; PNEC - Predicted No Effect Concentration; SARA - Superfund Amendments and Reauthorization Act; STOT - Specific Target Organ Toxicity; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System
Issue date	4 May 2020
Current revision	1.0
Indication of changes	This is the first version of this SDS.
Disclaimer	The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its use and all persons receiving it must make their own determination of the effects, properties and protections which pertain to their particular conditions. No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantability for a particular purpose), is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and use of the material because it is a pharmaceutical product. The above information is offered in good faith and with the belief that it is accurate. As of the date of issuance, we are providing all information relevant to the foreseeable handling of the material. However, in the event of an adverse incident associated with this product, this Safety Data Sheet is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.