

**1. Product and Company Identification**

Product name	ZELBORAF™ F.C. Tablets (240 mg)
Product code	SAP-10122762
Use	- pharmaceutical active substance (antineoplastic) *1
Company information	Enquiries: Hoffmann-La Roche Inc. 340 Kingsland Street USA-Nutley, N.J. 07110-1199 United States of America Phone 001-973/235 50 00 E-Mail info.sds@roche.com US Emergency phone: (800)-827-6243 US Chemtrec phone: (800)-424-9300
Synonyms	- ZELBORAF film-coated tablets 240 mg
*1 referring to:	Vemurafenib

2. Hazard identification**Emergency Overview**

Form	oval, biconvex tablet
Color	pinkish white to orange white
Hazard Overview	- Causes phototoxicity (skin irritation due to exposure to light). - May cause skin cancer.
Potential Health Effects	- Exposure: Ingestion - Target Organs: skin, gastrointestinal system, Skeletal system - Acute Effects: Causes phototoxicity (skin irritation due to exposure to light)., May cause skin drying, itching, peeling and rashes., This material has not been tested as a whole; therefore, the information described below is based on one or more of its ingredients., May cause musculoskeletal effects., Signs and symptoms may include muscle weakness or pain and skeletal abnormalities., May cause loss of hair., May cause general body weakness, fatigue and nausea. - Chronic Effects: May cause skin cancer. - Carcinogenicity: formulation not listed by NTP, IARC or OSHA - Carcinogenicity: IARC Gr3 not classifiable *2

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- Carcinogenicity: IARC Gr2B possibly carcinogenic to humans *3
- Carcinogenicity: IARC Gr3 not classifiable *4

GHS Classification no classification and labelling according to GHS

Additional Health Information - Conditions Aggravated: Hypersensitivity to this material and other materials in its chemical class.

*2 referring to: Silicon dioxide [SiO₂]
*3 referring to: Titanium dioxide
*4 referring to: Polyvinyl alcohol

3. Composition/Information on ingredients

Ingredients	Concentration
Vemurafenib CAS: 918504-65-1	~ 28 %
Silicon dioxide [SiO ₂] CAS: 7631-86-9	~ 1 %
Polyvinyl alcohol CAS: 25213-24-5	0.9 %
Titanium dioxide CAS: 13463-67-7	0.6 %

4. First-aid measures

Eye contact - rinse with tap water for 10 minutes - open eyelids forcibly

Skin contact - remove immediately contaminated clothes, wash affected skin with water and soap - do not use any solvents

Inhalation - remove the casualty to fresh air
- in the event of symptoms get medical treatment

Note to physician - treat symptomatically

5. Fire-fighting measures

Suitable extinguishing media - adapt extinguishing media to surrounding fire conditions

Flash point (liquid) not applicable

Specific hazards - very high probability of ignition of dust whirled up *1
- severe dust explosion hazard *1
- formation of toxic and corrosive combustion gases (hydrogen chloride, hydrogen fluoride, nitrogen oxides) possible *1
- substance is hazardous for water: contain fire-fighting wastewater *1

Protection of fire-fighters - precipitate gases/vapours/mists with water spray

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Special method of fire-fighting - cool endangered containers with water spray

*1 referring to: Vemurafenib

6. Accidental release measures

Environmental protection - do not allow to enter drains or waterways
- if the substance reaches waters or the sewer system, inform the competent authority

Methods for cleaning up - collect spilled material (avoid dust formation) and hand over to waste removal in sealed containers

7. Handling and storage

Handling

Technical measures - processing in closed systems, if possible superposed by inert gas (e.g. nitrogen) *1
- avoid dust formation; high dust explosion hazard *1
- high probability of ignition: ground plant, avoid effective ignition sources; avoid electrostatic charging of dust clouds *1
- processing in closed systems, if possible superposed by inert gas (e.g. nitrogen) *5
- avoid dust formation; high dust explosion hazard *5
- low probability of ignition: ground plant, avoid effective ignition sources *5

Storage

Storage conditions - room temperature *1
- protected from light and humidity *1

Packaging materials - high density polyethylene (HDPE) bottles with a child-resistant polypropylene screw cap

*1 referring to: Vemurafenib

*5 referring to: SAC-HPMC-AS LG ex3rd SUC

8. Exposure controls/Personal protection

Engineering Measures - see 7.

Monitoring

Threshold value (USA) air - ACGIH-TLV: 10.0 mg/m³ (total dust) *2
- OSHA-PEL: 6.00 mg/m³ (total dust) *2
- ACGIH-TLV: 10 mg/m³ *3
- OSHA-PEL: 15 mg/m³ (total dust) *3

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Threshold value (Roche) air	- Category 2 (Roche Group Directive K1, Annex 3): IOEL < 100 µg/m ³ - 10 µg/m ³	*1
Personal protective equipment		
Respiratory protection	- Respiratory protection is recommended as a precaution to minimize exposure. Effective engineering controls are considered to be the primary means to control worker exposure. Respiratory protection should not substitute for feasible engineering controls. - in case of open handling or accidental release: particle mask or respirator with independent air supply	
Hand protection	- protective gloves (eg made of neoprene, nitrile or butyl rubber)	
Eye protection	- safety glasses	
Body protection	- wear conductive shoes	
*1 referring to:	Vemurafenib	
*2 referring to:	Silicon dioxide [SiO ₂]	
*3 referring to:	Titanium dioxide	
9. Physical and chemical properties		
Color	pinkish white to orange white	
Form	oval, biconvex tablet	
Bulk density	< 300 kg/m ³	*5
Viscosity	2.82 cP	*5
Solubility	< 1 mg/ml, water (22 °C)	*1
Partition coefficient	log P _{ow} 5.1 (octanol/water) (calculated)	*1
Melting temperature	272 °C	*1
*1 referring to:	Vemurafenib	
*5 referring to:	SAC-HPMC-AS LG ex3rd SUC	
10. Stability and reactivity		
Conditions to avoid	- humidity - light - warming	*1 *1 *1
Note	- strongly exothermic decomposition at higher temperatures (> 200 °C)	*5
*1 referring to:	Vemurafenib	
*5 referring to:	SAC-HPMC-AS LG ex3rd SUC	

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11. Toxicological information

Acute toxicity	<ul style="list-style-type: none"> - NOEL 1'000 mg/kg (oral, rat) *1 - LD₅₀ > 2'500 mg/kg (oral, rat) *5
Subacute toxicity	<ul style="list-style-type: none"> - NOAEL 1'000 mg/kg/d (oral, rat, 28 d) *1
Local effects	<ul style="list-style-type: none"> - skin: non-irritant (rabbit; OECD No. 404) *1 - phototoxic (in vitro) *1
Sensitization	<ul style="list-style-type: none"> - not skin sensitizing (guinea pig) (OECD No. 406) *1
Subchronic toxicity	<ul style="list-style-type: none"> - NOAEL 450 mg/kg/d (oral, dog; 13 weeks) *1 - NOAEL 450 mg/kg/d (oral, rat; 13 weeks) *1
Mutagenicity	<ul style="list-style-type: none"> - not mutagenic (Ames test; OECD No. 471 (Salmonella typhimurium)) *1 - not mutagenic (test system in vivo; OECD No. 474 (Micronucleus Test)) *1
Reproductive toxicity	<ul style="list-style-type: none"> - not teratogenic (oral, rat) *1 - not teratogenic (oral, rabbit); NOAEL is 450 mg/kg/d. *1
*1 referring to:	Vemurafenib
*5 referring to:	SAC-HPMC-AS LG ex3rd SUC

12. Ecological information

Inherent biodegradability	<ul style="list-style-type: none"> - not inherently biodegradable < 10 %, 28 d (MITI Test II, OECD No. 302 C) *1
Ecotoxicity	<ul style="list-style-type: none"> - barely toxic for algae (nominal concentration = 100 mg/l) (Desmodesmus (=Scenedesmus) subspicatus) ErC₅₀ (72 h) > 100 mg/l (nominal concentration) EyC₅₀ (72 h) > 100 mg/l (nominal concentration) NOEC (72 h) 70.7 mg/l (nominal concentration) (OECD No. 201) *1 - barely toxic for planktonic crustaceans (nominal concentration = 100 mg/l) (Daphnia magna) EC₅₀ (48 h) > 100 mg/l (nominal concentration) NOEC (48 h) 0.27 mg/l (OECD No. 202) *1 - barely toxic for fish (nominal concentration = 100 mg/l) (guppy) LC₅₀ (96 h) > 100 mg/l (nominal concentration) NOEC (96 h) ≥ 0.27 mg/l (OECD No. 203) *1 - no adverse influence on substrate biodegradation (activated sludge) *1
*1 referring to:	Vemurafenib

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13. Disposal considerations

- Waste from residues
- observe local/national regulations regarding waste disposal
 - incinerate in qualified installation with flue gas scrubbing
 - DO NOT FLUSH unused medications or POUR them down a sink or drain. If available in your area, use takeback programs run by household hazardous waste collection programs or community pharmacies to dispose of unused and expired medicines. If you don't have access to a takeback program, dispose of these medicines in the household trash by removing them from their original containers and mixing them with an undesirable substance, such as used coffee grounds or kitty litter.

14. Transport information

- Note
- not classified by transport regulations, proper shipping name non-regulated

15. Regulatory information

- TSCA Status
- FDA Exemption - not on inventory
- Reporting Requirements
- The United States Environmental Protection Agency (USEPA) has not established a Reportable Quantity (RQ) for releases of this material.
 - In New Jersey, report all releases which are likely to endanger the public health, harm the environment or cause a complaint to the NJDEPE Hotline (1-609-292-5560) and to local officials.
 - State and local regulations vary and may impose additional reporting requirements.

16. Other information

- Safety-lab number
- BS-9076 *1
 - BS-9274 *1
 - BS-9349 *1

- Edition documentation
- changes from previous version in sections 13

*1 referring to: Vemurafenib

The information in this safety data sheet is based on current scientific knowledge. It should not be taken as expressing or implying any warranty concerning product characteristics.