# SAFETY DATA SHEET

## * 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Material** TYKERB TABLETS

**Synonym(s)** TYVERB TABLETS * GW572016F 100 MG TABLETS * GW572016F 250 MG TABLETS * NDC: 0173-0752-00 * LAPATINIB DITOSYLATE MONOHYDRATE, FORMULATED PRODUCT

**Recommended Use** Medicinal Product

**Company Name**

GlaxoSmithKline UK
980 Great West Road
Brentford, Middlesex TW8 9GS UK
UK General Information (normal business hours): +44-20-8047-5000

GlaxoSmithKline US
5 Moore Drive
Research Triangle Park, NC 27709 USA
US General Information (normal business hours): +1-888-825-5249

Email Address: msds@gsk.com
Website: www.gsk.com

EMERGENCY PHONE NUMBERS -

TRANSPORT EMERGENCIES (by country / geographic region):

| | |
|---|---|
| Africa / EU / Israel / Middle East (English / European languages): | +44 (0) 1235 239 670 |
| Asia Pacific (except China): | +65 3158 1074 |
| China: | +86 10 5100 3039 |
| Middle East / Africa (Arabic-speaking countries): | +44 (0) 1235 239 671 |
| US: | +1 703 527 3887 |

available 24 hrs/7 days; multi-language response

MEDICAL EMERGENCIES: +1 612 221 3999, Ext 221
available 24 hrs/7 days; multi-language response

## * 2. HAZARDS IDENTIFICATION

**Fire and Explosion Hazards**

Expected to be non-combustible.

**Health** Caution - Pharmaceutical agent.
Not expected to be a significant health hazard unless product is crushed or broken.
Possible effects of overexposure in the workplace include: irritation; diarrhoea; rash.
Health effects information is based on hazards of components.
Exposure might occur via ingestion; skin; eyes.

**Environment** May cause long-term adverse effects in the aquatic environment.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Ingredients | CAS # | Percent | EC-No. |
|---|---|---|---|
| LAPATINIB | 388082-78-8 | 44 | |
| Other components below reportable levels | | 56 | |

## 4. FIRST-AID MEASURES

**Ingestion** Never attempt to induce vomiting. Do not attempt to give any solid or liquid by mouth if the exposed subject is unconscious or semi-conscious. Wash out the mouth with water. If the exposed subject is fully conscious, give plenty of water to drink. Obtain medical attention.

**Inhalation** Physical form suggests that risk of inhalation exposure is negligible.

**Skin contact** Using appropriate personal protective equipment, remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical attention if skin reaction occurs, which may be immediate or delayed.

**Eye contact** Wash immediately with clean and gently flowing water. Continue for at least 15 minutes. Obtain medical attention.

**NOTES TO HEALTH PROFESSIONALS**

**Medical Treatment** Treat according to locally accepted protocols. For additional guidance, refer to the local poison control information centre.

**Medical Conditions Caused or Aggravated by Exposure** Refer to prescribing information for detailed description of medical conditions caused by or aggravated by overexposure to this product.

**Antidotes** No specific antidotes are recommended.

## 5. FIRE-FIGHTING MEASURES

**Fire and Explosion Hazards** Not expected for the product, although the packaging is combustible.

**Extinguishing Media** Water, dry powder or foam extinguishers are recommended. Carbon dioxide extinguishers may be ineffective.

**Special Firefighting Procedures** For single units (packages): No special requirements needed.
For larger amounts (multiple packages/pallets) of product: Since toxic, corrosive or flammable vapours might be evolved from fires involving this product and associated packaging, self contained breathing apparatus and full protective equipment are recommended for firefighters.
If possible, contain and collect firefighting water for later disposal.

**Hazardous Combustion Products** Toxic, corrosive or flammable thermal decomposition products are expected when the product is exposed to fire.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions** Wear protective clothing and equipment consistent with the degree of hazard.

**Environmental Precautions** For large spills, take precautions to prevent entry into waterways, sewers, or surface drainage systems.

**Clean-up Methods** Collect and place it in a suitable, properly labelled container for recovery or disposal.

**Decontamination Procedures** No specific decontamination or detoxification procedures have been identified for this product.

## 7. HANDLING AND STORAGE

**HANDLING**

**General Requirements** Avoid breaking or crushing tablets.

**STORAGE** No storage requirements necessary for occupational hazards. Follow product information storage instructions to maintain efficacy.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**OCCUPATIONAL EXPOSURE LIMITS**

| | |
|---|---|
| **INGREDIENT** | GW572016F |
| **GSK Occupational Hazard Category** | 2 |
| **GSK Occupational Exposure Limit** | 400 mcg/m3 (8 HR TWA) |

**PERSONAL PROTECTIVE EQUIPMENT**

**Eye Protection** Not required for the normal handling of this material.

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| **Other Equipment or Procedures** | Follow all local regulations if personal protective equipment (PPE) is used in the workplace. Wash hands and arms thoroughly after handling. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**

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|---|---|
| **Physical Form** | Tablet. |

## 10. STABILITY AND REACTIVITY

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|---|---|
| **Stability** | This product is expected to be stable. |
| **Conditions to Avoid** | None for normal handling of this product. |

## * 11. TOXICOLOGY INFORMATION

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|---|---|
| **Pharmacological Effects** | This product contains active ingredient(s) with the following activity: a dual kinase and growth factor inhibitor. |
| **Target Organ Effects** | No specific target organ effects have been identified. |

**Routes of Exposure**

| | |
|---|---|
| **Oral Toxicity** | Not expected to be toxic following ingestion.<br>Assessment based upon effects of individual components. |
| **Inhalation Toxicity** | No studies have been conducted. |
| **Skin Effects** | Minor irritation might occur following direct contact.<br>Assessment based upon effects of individual components. |
| **Eye Effects** | Minor irritation might occur following direct contact with eyes.<br>Assessment based upon effects of individual components. |
| **Sensitisation** | Sensitisation (allergic skin reaction) is not expected.<br>Assessment based upon effects of individual components. |
| **Genetic Toxicity** | Genetic toxicity is not expected under occupational exposure conditions based upon negative results in laboratory assays.<br>Assessment based upon effects of individual components. |
| **Carcinogenicity** | No components are listed as carcinogens by GSK, IARC, NTP or US OSHA. |
| **Reproductive Effects** | This material is not considered to be a hazard to human fertility under occupational exposure conditions.<br>The ingredient lapatinib has caused adverse effects on the development of unborn offspring in animal studies. These effects are linked only to high doses of this substance; low doses did not produce this adverse effect.<br>Insufficient information available to classify this material for hazard to milk production.<br>Assessment based upon effects of individual components. |
| **Other Adverse Effects** | The following adverse effects have been noted with therapeutic use of this material: diarrhoea; rash; toxicity to the liver resulting in abnormal blood chemistry. |

## 12. ECOLOGICAL INFORMATION

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|---|---|
| **Summary** | This material contains an active ingredient that has had limited testing and no adverse environmental effects were observed in the tests conducted. There is insufficient information to determine the scope of the environmental effects this material may cause. This material contains an active ingredient that may persist in the environment. Until there is additional testing to determine other potential adverse effects on the environment, appropriate precautions should be taken to limit release of this compound to the environment. Local regulations and procedures should be consulted prior to environmental release. |

**ECOTOXICITY**

**Aquatic**

| | |
|---|---|
| **Activated Sludge Respiration** | This material contains an active ingredient that is not toxic to activated sludge microorganisms. |
| | IC50: 2816 mg/l, 3 Hours, Residential sludge, Nominal |
| **Algal** | No toxicity to algae was observed for the active ingredient in this mixture, but the upper range of the test was limited by the low water solubility of the compound. |

| | | |
|---|---|---|
| | IC50: | > 17.3 mg/l, 96 Hours, Selenastrum capricornutum, green algae, Static test |
| | NOEC: | 3.43 mg/l, 96 Hours |
| **Daphnid** | No toxicity to daphnids was observed for the active pharmaceutical ingredient in this mixture, but the upper range of the test was limited by the low water solubility of this compound. | |
| | EC50: | > 0.17 mg/l, 48 Hours, Daphnia magna, Static test |
| | NOEC: | 0.17 mg/l, 48 Hours, Daphnia magna, Static test |
| | Chronic EC50: | > 0.18 mg/l, 21 Days, Daphnia magna, Static renewal test |
| **Fish** | No toxicity to fish was observed for the active ingredient, but the upper range of the test was limited by the low water solubility of the compound. | |
| | EC50: | > 43.7 mg/l, 96 Hours, Adult Oncorhyncus mykiss, rainbow trout, Static renewal test |
| | NOEC: | 43.7 mg/l, 96 Hours |
| | Growth Test LC50: | > 0.0016 mg/l, 28 Days, Juvenile Pimephales promelas, fathead minnow, semi-static test conditions |
| | Growth Test LOEC: | > 0.0016 mg/l, 28 Days |
| | Growth Test NOEC: | > 0.0016 mg/l, 28 Days |

**Terrestrial**

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|---|---|---|
| **Earthworm** | This mixture contains an active pharmaceutical ingredient that is not toxic to earthworms. | |
| | EC50: | > 1000 mg/kg, 14 Days, Eisenia foetida, manure worm, Nominal |
| | NOEC: | 1000 mg/kg, 14 Days, Eisenia foetida, manure worm, Nominal |
| **Other Species - Terrestrial** | This mixture contains an active pharmaceutical ingredient that is not toxic to these organisms. | |
| | EC50: | > 1620 mg/kg, 28 Days, Folsomia candida, Collembola, Nominal |
| | LOEC: | 1620 mg/kg, 28 Days, |
| | NOEC: | 540 mg/kg, 28 Days, |
| | EC50: | > 1620 mg/kg, 28 Days, Soil microorganisms, Nominal |
| | LOEC: | 540 mg/kg, 28 Days, |
| | NOEC: | 177 mg/kg, 28 Days, |

**MOBILITY**

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|---|---|---|
| **Solubility** | This material contains an active ingredient that for environmental fate predictions has very low solubility in water. | |
| **Adsorption** | This material contains an active ingredient that is likely to adsorb to soil or sediment. The active ingredient may persist in soil or sediment if this mixture is released directly to the environment.<br><br>This material contains an active ingredient that is likely to adsorb to sludges and other biomass. It may persist in sludges or other biomass if released directly to the environment. | |
| | Soil Sediment Sorption (log Koc): | 4.65 to 6.12, Measured |
| | Sludge Biomass Distribution Coefficient (log Kd): | 5.26 Measured at pH 6.1 to 6.6 |
| **Partitioning** | This material contains an active pharmaceutical ingredient with octanol/water partition coefficient data that suggests that for environmental fate predictions the active pharmaceutical ingredient may have the tendency to distribute into fats. | |

**PERSISTENCE/DEGRADATION**

**Photolysis** This material contains an active pharmaceutical ingredient that is likely to undergo photodegradation.

UV/Visible Spectrum: 362 nm

**Biodegradation** This material contains an active ingredient that is not readily biodegradable (as defined by 1993 OECD Testing Guidelines). It may persist in the environment.

Aerobic - Ready

Percent Degradation: 32 %, 28 days, Closed bottle test, Activated sludge

Aerobic - Inherent

Percent Degradation: 50 %, 46-88 days, OECD 308, Water-Sediment

Aerobic - Soil

Percent Degradation: 0.2 %, 64 days, , Soil

**BIOACCUMULATION**

**Bioaccumulation** This material contains an active ingredient that will have a tendency to bioaccumulate in the food chain.

## 13. DISPOSAL CONSIDERATIONS

**Disposal Recommendations** Collect for recycling or recovery if possible. The disposal method for rejected products/returned goods must ensure that they cannot be re-sold or re-used.

**Regulatory Requirements** Observe all local and national regulations when disposing of this material.

## * 14. TRANSPORT INFORMATION

The SDS should accompany all shipments for reference in the event of spillage or accidental release. Only authorised persons trained and competent in accordance with appropriate national and international regulatory requirements may prepare dangerous goods for transport.

**UN Classification and Labelling**

**Transport Information** Not regulated in transport.

## 15. REGULATORY INFORMATION

The information included below is an overview of the major regulatory requirements. It should not be considered to be an exhaustive summary. Local regulations should be consulted for additional requirements.

**EU Classification and Labelling**

Exempt from requirements of EU Dangerous Preparations directive - product regulated as a medicinal product, cosmetic product or medical device.

**US OSHA Standard (29 CFR Part 1910.1200)**

**Classification** This dosage form is exempt from the requirements of the OSHA Hazard Communication Standard.

**Other US Regulations**

**TSCA Status** Exempt

## 16. OTHER INFORMATION

**References** GSK Hazard Determination

**SDS Version Number** 13

### SDS Sections Updated

| Sections | Subsections |
|---|---|
| HAZARDS IDENTIFICATION | Adverse effects |
| | Chemical Hazards |
| | Conditions Aggravated by Exposure |
| | Disposal |
| | Environment |
| | Eye Contact |

## SDS Sections Updated

| Sections | Subsections |
|---|---|
| HAZARDS IDENTIFICATION | Health |
| | Ingestion |
| | Inhalation |
| | Overview |
| | Prevention |
| | Response |
| | Skin Contact |
| | Storage |
| | Summary |
| | Supplemental Information |
| | Thermal Hazards |
| IDENTIFICATION OF SUBSTANCE / PREPARATION AND OF COMPANY | |
| TOXICOLOGY INFORMATION | Aspiration toxicity |
| | Carcinogenicity |
| | Dermal |
| | Eye Effects |
| | Genetic Toxicity |
| | Inhalation Toxicity |
| | Oral Toxicity |
| | Other Adverse Effects |
| | Pharmacological Effects |
| | Reproductive Effects |
| | Respiratory sensitization |
| | Sensitisation |
| | Skin Toxicity |
| | Specific Target Organ Toxicity - Repeated Exposure |
| | Specific Target Organ Toxicity - Single Exposure |
| | Symptoms of Overexposure |
| | Target Organ Effects |
| | Toxicokinetics, metabolism and distribution |
| TRANSPORT INFORMATION | |

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create any warranty, express or implied. It is the responsibility of the user to determine the applicability of this information and the suitability of the material or product for any particular purpose.