# Safety Data Sheet

Bristol-Myers Squibb Company

| 1. IDENTIFICATION | | |
|---|---|---|
| *Product Information* | | |
| Product name | Atazanavir Sulfate | |
| Version | 2.0, 22.01.2020 | |
| Jurisdiction | This Safety Data Sheet was prepared in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) for the United States of America (USA) (CFR 1910.1200), European Union (EU) (EC 1272/2008) and United Nations (UN). The following countries utilize the UN GHS classification process: Mexico, Brazil, China, New Zealand, Canada, Japan, and Korea. | |
| Chemical Name | 2,5,6,10,13-Pentaazatetradecanedioic acid, 3,12-bis(1,1-dimethylethyl)-8-hydroxy-4,11-dioxo-9-(phenylmethyl)-6-[[4-(2-pyridinyl)phenyl]methyl]-, 1,14-dimethyl ester, (3S,8S,9S,12S)-, sulfate (1:1) | |
| EC No. | 620-495-2 | |
| CAS No. | 229975-97-7 | |
| Synonyms | BMS-232632-05; BMS 232632-05; Reyataz®; 2,5,6,10,13-Pentaazatetradecanedioic acid, 3,12-bis(1,1-dimethylethyl)-8-hydroxy-4,11-dioxo-9-(phenylmethyl)-6-[[4-(2-pyridinyl)phenyl]methyl]-, dimethyl ester, (3S,8S,9S,12S)-, sulfate (1:1) (salt) | |
| Intended Uses | This material is the active pharmaceutical ingredient (API) in a drug product. It is used to treat human immunodeficiency virus infection (HIV, AIDS). | |
| *Company/Undertaking Identification* | | |
| Address | USA<br>**Bristol-Myers Squibb Company**<br>P.O. Box 191<br>New Brunswick, New Jersey 08903<br>United States of America<br>1-800-332-2056 | Ireland<br>**Bristol-Myers Squibb Company**<br>Cruiserath Road, Mulhuddart - Dublin 15<br>Cruiserath, Ireland<br>MG-GBS-MSDS-Request@bms.com<br>+ 353.1.8854000 |
| Emergency Phone No. | USA (also Canada, Puerto Rico and the Virgin Island): 1-800-424-9300<br>Other Countries: See "Section 16" for country-specific emergency phone numbers from CHEMTREC. | Ireland: +(353)-19014670 |

| 2. HAZARDS IDENTIFICATION | |
|---|---|
| **Classification and Labelling Common to All Jurisdictions** | |
| Classification | Combustible Dust<br>Serious Eye Damage/Eye Irritation - Category 1<br>Specific Target Organ Systemic Toxicity (Repeated Exposure) - Category 1 |
| Symbol |  |
| Signal Word | Danger |
| Hazard | May form combustible dust concentrations in air (during processing). |

## 2. HAZARDS IDENTIFICATION

| | |
|---|---|
| Statements | Causes serious eye damage.<br>Causes damage to organs (heart, liver) through prolonged or repeated exposure. |
| Precautionary Statements | Minimize dust generation, accumulation, and dispersal in air.<br>Wear protective gloves/clothing and eye/face protection.<br>Do not breathe dust.<br>Wash thoroughly after handling.<br>Do not eat, drink or smoke when using this product. |

**Classification and Labelling for Specific Jurisdictions**

**USA**

| | |
|---|---|
| Classification | No additional classifications |

**EU**

| | |
|---|---|
| Classification | No additional classifications |

**UN**

| | |
|---|---|
| Classification | Acute Toxicity - Oral - Category 5 |
| Hazard Statements | May be harmful if swallowed. |
| Other information | Employees with Human Immunodeficiency Virus (HIV) may develop viral resistance to anti-viral drugs of this class depending on the nature and duration of exposure to this material; see section 4. |

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Components | Concentration | CAS No. | EU only | | Other Registration No. |
|---|---|---|---|---|---|
| | | | EC No./REACH Registration No. | H-code(s) | |
| *Hazardous components*<br>Atazanavir Sulfate | 100 % | 229975-97-7 | -- | H318<br>H372 | -- |

See section 16 for H-code text.

## 4. FIRST AID MEASURES

| | |
|---|---|
| Eye contact | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. |
| Skin contact | Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Discard contaminated clothing or wash before re-use. Get medical attention/advice if you feel unwell. |
| Inhalation | Move to fresh air. Oxygen or artificial respiration if needed. Get medical attention/advice if you feel unwell. |

| 4. FIRST AID MEASURES | |
|---|---|
| Ingestion | Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention/advice if you feel unwell. |
| Notes to Physician | Medical conditions aggravated include: diabetes, liver disorders, bleeding disorders. This product has been reported to interact with the following medications: cardiovascular drugs, benzodiazepine, Ergot Derivatives, gastrointestinally toxic drugs, neurotoxic drugs, anticoagulants, statins, Antiviral drugs, St. John's wort. Employees with HIV may develop viral resistance to anti-viral drugs of this class depending on the nature and duration of exposure to this material. Based on the opportunity for exposure to this material, employees with HIV should consult with an occupational health physician to address any potential concerns. Product literature should be consulted for drug interactions. Refer to Section 11. |
| Medical Surveillance | The need for a pre-placement, follow-up physical examination and history for employees with potential exposure to this compound is to be evaluated by a physician that is thoroughly knowledgeable about both the toxicity of this compound and the extent of work place exposure. Baseline testing would include: a complete blood count with differential, a blood test for liver function, a blood test for kidney function, blood glucose test, EKG. For employees with HIV handling this material, Medical Surveillance may include testing and/or counseling regarding use of additional personal protective equipment, additional engineering controls, and/or alternative work methods. Based on opportunity for exposure and duration of exposure a periodic follow-up examination may be considered. It is recommended that the content be similar to the pre-placement exam.<br>Employees who are pregnant, are breast-feeding, or who are concerned with other reproductive issues should be encouraged to consult with the occupational health physician monitoring worker's health. |

| 5. FIRE-FIGHTING MEASURES | |
|---|---|
| Flammable Properties | Not readily combustible |
| Extinguishing Media | Suitable extinguishing media: Dry chemical, Water spray, Foam<br>Unsuitable extinguishing media: Do NOT use water jet. |
| Protection of Firefighters | Specific hazards: Not available<br>Protective equipment: Use personal protective equipment. In the event of fire, wear self-contained breathing apparatus.<br>Hazardous Combustion Products: carbon oxides (COx), nitrogen oxides (NOx), and, sulphur compounds |
| Other information | Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Decontaminate protective clothing and equipment before reuse. |

| 6. ACCIDENTAL RELEASE MEASURES | |
|---|---|
| Personal precautions | Refer to protective measures listed in sections 7 and 8. Use personal protective equipment. Examples include tightly fitting safety goggles, lab coat and impervious gloves. Wear respiratory protection. Depending on the nature of the spill (quantity and extent of spill) additional protective clothing and equipment such as a self-contained breathing apparatus may be needed. |
| Environmental precautions | Prevent release to drains and waterways. Prevent release to the environment. |
| Containment Methods | Wet down any dust to prevent generation of aerosols, if appropriate. Cover with suitable material. |

| 6. ACCIDENTAL RELEASE MEASURES | |
|---|---|
| Cleanup Methods | Contain and collect spillage and place in container for disposal according to local regulations (see Section 13). Handle waste materials, including gloves, protective clothing, contaminated spill cleanup material, etc., as appropriate for chemically and pharmacologically similar materials. |
| Other information | Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Nonsparking tools should be used. |

| 7. HANDLING AND STORAGE | |
|---|---|
| Handling Precautions | Avoid exposure - obtain special instructions before use. Avoid formation of dust and aerosols. Keep away from heat and sources of ignition. Use of inert gas should be considered for process conditions to minimize the risk of ignition. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Refer also to Section 10. Prevent release to drains and waterways. |
| Container Requirements | Package in LDPE antistatic bags, double bag with desiccant in between bags and placed in a rigid HDPE container sealed w/gasketed lid. Provide anti-static bags where drum liners are used. Keep container tightly closed. Store in sturdy containers appropriate to maintain the integrity of this material for its intended use. |
| Storage Conditions | Store at 2 - 30 °C. Protect from moisture. Protect against light. Keep away from heat, sparks and flames. |
| Specific use(s) | Refer to Section 1 |

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

| Exposure limit(s) | Company Guideline | ACGIH | Germany OEL | UK MEL |
|---|---|---|---|---|
| Atazanavir Sulfate | 900 µg/m3 TWA | -- | -- | -- |

| | |
|---|---|
| Recommended Industrial Hygiene Monitoring Methods | General - The health hazard risk of handling this material is dependent on many factors, including physical form, % API in material being handled, duration and frequency of process task, and effectiveness of controls. If it is necessary to handle this compound outside of engineering controls, an exposure risk assessment should be conducted and procedures documented by a qualified EHS professional. |

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | |
|---|---|
| Engineering Controls and Ventilation | Use process enclosures, containment technology, or other engineering controls to keep airborne levels below recommended exposure limit. When handling quantities up to 150 milligrams, a standard laboratory with general laboratory dilution ventilation (e.g. 6-12 air changes per hour) is appropriate. When handling quantities from 150 milligrams to 1 kilogram, work in a standard laboratory using a fume hood; biological safety cabinet(Class II, all types), approved vented enclosure; specific local exhaust. Quantities exceeding 1 kilogram should be handled in a designated laboratory. A laminar flow/powder containment booth is recommended for handling >1 kilograms of active substance. For manufacturing and pilot plant operations, use semi to closed material transfer systems and containment of open operations. HEPA filtration for recirculation of exhaust is required.<br>It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in an manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks. |
| Respiratory protection | Use and selection of respiratory protection is based upon engineering controls in use and potential for aerosol generation. When engineering controls are not sufficient control exposure, wear an approved respirator with NIOSH Class 100 or high efficiency particulate (HEPA) filters or cartridges (EN 140/EN 136) when exposures are up to 10 times the exposure control guideline. Wear a loose-fitting (Tyvek or helmet type) HEPA powered-air purifying respirator (PAPR) (EN 12941) when exposures are 10-25 times the exposure control guideline. Wear a full facepiece negative pressure respirator with Class 100 or HEPA filters (EN 136) when exposures are 25-50 times the exposure control guideline. Wear a tight-fitting, full facepiece HEPA PAPR (EN 12942) when exposures are 50-100 times the exposure control guideline. Wear a hood-shroud HEPA PAPR (EN 12941) or full facepiece supplied air respirator (EN 139) operated in a pressure demand or other positive pressure mode when exposures are 100-1000 times the exposure control guideline. |
| Eye protection | Safety glasses with side-shields are recommended (EN 166). Face shields or chemical safety goggles (EN 166) may be required if splash potential exists or if corrosive materials are present. Note: Choice of eye protection may be influenced by the type of respirator which is selected. |
| Hand protection | Impervious nitrile, rubber and latex gloves are recommended (EN 420, EN 374). If material is handled in solution, the solvent should also be considered when selecting protective clothing material. Please note that employees who are allergic to natural rubber latex should use nitrile gloves. |
| Skin and body protection | Wear a laboratory coat (EN 340) when handling quantities up to 1 kilograms. For quantities over 1 kilogram, wear laboratory coat (EN 340) or coverall of low permeability (EN 1149-1). For manufacturing operations, wear coverall of low permeability (EN 1149-1). |
| Hygiene | Wash hands and face before breaks and immediately after handling the product. |
| Environmental exposure controls | Prevent release to drains and waterways. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

*General Information*

*Appearance*

| | |
|---|---|
| Physical State | solid |
| Color | white to pale yellow |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Form | crystalline powder, lumpy |
| *Odour* | |
| Odour | Not available |
| Odor Threshold | Not available |
| *Important health safety and environmental information* | |
| pH | 1.9 @ 21 - 27 °C saturated aqueous solution |
| *Other information* | |
| Bulk density | Not available |
| Chemical Name | 2,5,6,10,13-Pentaazatetradecanedioic acid, 3,12-bis(1,1-dimethylethyl)-8-hydroxy-4,11-dioxo-9-(phenylmethyl)-6-[[4-(2-pyridinyl)phenyl]methyl]-, 1,14-dimethyl ester, (3S,8S,9S,12S)-, sulfate (1:1) |
| Evaporation rate | Not available |
| Molecular formula | C38 H52 N6 O7 . H2 O4 S |
| Hydrolysis/Photolysis | Low rate of hydrolysis in water Moderate rate of photolysis in water |
| Hygroscopicity | Not available |
| Molecular Weight | 801.94 g/mol |
| Log Octanol/Water Partition Coefficient [log Kow] | 3.47 @ 25 °C pH 5<br>3.298 @ 25 °C pH 7<br>3.23 @ 25 °C pH 9 |
| Surface Tension | Not available |
| pKa | 4.7 |
| Particle Size | 95 % of particles are < 28.2 microns |
| Solubility, Water | 4 - 5 g/l (slightly soluble) |
| Solubility in other solvents | methanol: soluble<br>ethyl alcohol: soluble |
| Specific Gravity/ Relative density | Not available |
| Viscosity, dynamic | Not available |
| Viscosity, kinematic | Not available |
| % Volatile | Not available |
| *Thermal/Stability properties* | |
| Autoignition temperature | Not available |
| Boiling Point | Not available |
| Thermal decomposition | Not available |
| Explosive Limits, LEL | Not available |
| Explosive limits, UEL | Not available |
| Explosiveness | Not explosive |
| Flammability | Not readily combustible |
| Flash point | Not available |
| Melting Point | 198 °C |
| Oxidizing Potential | Non-oxidizer based on chemical structure. |
| *Vapor Properties* | |
| Vapor Density | Not available |
| Vapor Pressure | Not available |
| Saturated Vapor Concentration | Not available |

| **10. STABILITY AND REACTIVITY** | |
|---|---|
| *Stability* | |
| Chemical Stability | Stable under normal conditions. |
| Conditions to avoid | Not available |
| Materials to avoid | Not available |
| Hazardous decomposition products | Hazardous decomposition products formed under fire conditions.: carbon oxides (COx), nitrogen oxides (NOx), and, sulphur compounds |
| Hazardous reactions | None known. |
| *Sensitivity to static discharge/Dust exp.* | |
| Explosion Severity Factor | 177 m.b_/s<br>St1<br>Material exhibits weak to moderate explosion characteristics if ignited as a dust cloud. |
| Minimum Ignition Energy | > 3 - < 10 mJ<br>Material is extremely susceptible to igniting a dust cloud under certain conditions due to low minimum ignition energy. |
| Volume Resistivity (ambient) | 38.0000E+12 ohm.m<br>Material is highly susceptible to accumulating static charges during processing. |
| Charge decay time (ambient) | 33 Minute |
| Ignition Temperature of a Dust Cloud | > 440 - < 460 °C |
| Layer decomposition | Material begins to exhibit exothermic activity at a temperature of: 390 - 440 °C. Maintain maximum process temperatures at least 20°C below this onset temperature. |
| Summary Statements | Powder handling equipment such as dust collectors, dryers, and mills may require additional protective measures (e.g. explosion venting, inerting, etc.). Provide suitable bonding and grounding for containers, personnel, and process equipment to control static charges. Provide anti-static bags where drum liners are used. Use of inert gas should be considered for process conditions to minimize the risk of ignition. NOTE: THIS DATA IS REPRESENTATIVE FOR THE SPECIFIC PROCESS STATE OF THE MATERIAL NOTED ON THIS SDS ONLY. Dust explosion severity risk can vary upon processing or environmental change (e.g. milling, micronizing, sieving, blending or heating can increase the risk of explosion), and may require additional dust explosion testing. |

| **11. TOXICOLOGICAL INFORMATION** | |
|---|---|
| Routes of Entry | Ingestion, inhalation, Eye contact, Skin contact |
| Eye Irritation | Severely irritating to eyes. |

| 11. TOXICOLOGICAL INFORMATION | |
|---|---|
| Skin Irritation | Not irritating to skin. |
| Respiratory Irritation | Not available |
| Sensitization | Not a dermal sensitizer |
| Acute Toxicity Study | **Acute Oral**<br>LD50 (rat, males and females): > 1,600 mg/kg No mortality occurred.<br>LD50 (mouse, males and females): > 1,600 mg/kg High exposure effects include: hypoactivity, tremors, loss of reflexes, irregular respiration, mortality. |
| Repeated Dose Toxicity | 2 weeks - 24 months oral (daily) mouse, rat, dog study with recovery period (2 months) (males and females): NOAEL (3 month, mouse) = 20 mg/kg; Low dose effects include (< = 100 mg/kg): decreased body weight, vomiting, decreased food consumption, changes in blood clotting parameters, minimal changes in clinical chemistry parameters, increased liver enzymes, increased organ weights included:, liver, kidney, adrenal glands, testes, decreased organ weights included:, heart. High dose effects include: mortality, increased water consumption, dehydration, stool changes, increased urine volume, decreased white blood cell count, increase in blood cholesterol, effects glucose metabolism, hypercalcemia, alopecia, increased organ weights included:, liver, heart, adrenal glands, testes, decreased organ weights included:, prostate. Low dose microscopic effects include: liver. High dose microscopic effects include: liver, bile duct, lungs. Effects still present after recovery include: increased liver weight.<br>3 months dietary (daily) rat study (males and females): NOAEL = 1,000 mg/kg; Low dose effects include (< = 100 mg/kg): fecal changes, changes in clinical pathology parameters. |
| Genetic Toxicity | **In vitro**<br>Ames reverse-mutation assay -- negative<br>Chromosome aberration test in vitro -- positive<br>**in vivo**<br>oral, repeat-dose micronucleus assay (rat) -- negative<br>oral, Unscheduled DNA synthesis assay (rat) -- negative<br>**Mutagenicity Assessment**<br>The weight of evidence demonstrates that this material is not genotoxic. |
| Carcinogenicity | 2 Years oral (daily) rat study : Tumor NOAEL = 1,200 mg/kg (males and females). No treatment-related tumors were observed.<br>2 Years oral (daily) mouse study : Tumor NOAEL = 120 mg/kg (males and females). [tumor organs: liver]<br>**Carcinogenicity Assessment**<br>The relevance for human risk assessment is unknown. |

## 11. TOXICOLOGICAL INFORMATION

| Carcinogenicity | ACGIH | IARC | NTP |
|---|---|---|---|
| Atazanavir Sulfate | -- | -- | -- |

**Reproductive Toxicity**

oral (daily) Study of Fertility and Early Embryonic Development (rat)
(parent, females) LOAEL = 100 mg/kg
(parent, males) NOAEL = 375 mg/kg
Maternal effects include: altered estrous cycling, decreased body weight, decreased fertility. Paternal effects include: decreased body weight, decreased food consumption. Adverse effects on fertility occur only at maternally toxic doses. No effects were observed in the fetus/embryo.
oral (daily) Study of Fertility and Early Embryonic Development (rat)
(parent, females) NOAEL = 1400 mg/kg
No effects were observed

**Assessment Reproductive Toxicity**

The weight of evidence indicates that this compound is not a reproductive hazard. No effects were observed in the fetus/embryo.

**Developmental Toxicity**

oral Study of Embryo-Fetal Development (rat)
(parent, females) LOAEL = 200 mg/kg
(embryo/fetus) NOAEL = 1920 mg/kg
Fetal effects include: No effects were observed. Maternal effects include: nasal mucous discharge, decreased weight gain, decreased food consumption, fecal changes.
oral (daily) Study of Embryo-Fetal Development (rabbit)
(parent, females) NOAEL = 15 mg/kg
(embryo/fetus) NOAEL = 60 mg/kg
Maternal effects include: decreased weight gain, decreased food consumption. No effects were observed in the fetus/embryo.
oral (daily) Study of Pre- and Postnatal Development (rat)
(parent, females) LOAEL = 50 mg/kg
(F1 offspring) NOAEL = 220 mg/kg
Offspring effects include: decreased body weight. Maternal effects include: salivation, decreased body weight.

**Developmental Toxicity Assessment**

Did not show teratogenic effects in animal experiments. This compound and/or its metabolites may be excreted into the milk.

**Human experience**

**Experiences with Human Exposure**

oral therapeutic use low exposure - acute effects include: allergies, rash, redness and swelling of skin, itching, eczema, increase in food consumption, anorexia, body weight changes, increased urine volume, bloody urine, fatigue, anxiety, depression, difficulty sleeping, headache, confusion, sleepiness, dizziness, jaundice, taste disturbance, nausea, flatulence, weakness, fever, hair loss, joint pain, muscle pain, chest pain, oedema, breathing difficulties, unconsciousness, bleeding, death, abnormal liver enzymes, changes in ECG parameters, increase in blood pressure, irregular cardiac activity, neurological disorder, stomach/intestinal disorders, inflammation of gastrointestinal tract, ulceration, liver disorders, kidney disorders, muscle effects, hyperglycemia, changes in body fat, viral resistance.

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| Target Organs | heart, liver |
| Symptoms | pain, redness and swelling of eyes, See "Human Experience". |
| Pharmacokinetics/ Toxicokinetics | Absorption: Data available upon request.<br>Distribution: Data available upon request.<br>Metabolism: Data available upon request.<br>Elimination: Half-life = 7.9 Hour(s) (Human). |
| Other Toxicity Information | Not available |

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects**

**Acute Toxicity to Fish**

LC50 (Oncorhynchus mykiss (rainbow trout), 96 H): > 89 mg/l. (limit of solubility)

**Acute Toxicity to Aquatic Invertebrates**

EC50 (Daphnia magna (Water flea), 48 H): > 5.4 mg/l. (limit of solubility)

**Toxicity to aquatic plants**

EC50 (Pseudokirchneriella subcapitata (formerly Selenastrum capricornutum), Algae growth rate, 72 H): > 4.1 mg/l (limit of solubility)

EC50 (Pseudokirchneriella subcapitata (formerly Selenastrum capricornutum), Algae biomass, 72 H): > 4.1 mg/l (limit of solubility)

**Toxicity to microorganisms**

Respiration inhibition, EC50 (3 H): > 1,000 mg/l

**Chronic toxicity to fish**

NOEC (Pimephales promelas (fathead minnow), 32 D): > 8.6 mg/l(limit of solubility)

**Chronic toxicity to aquatic invertabrates**

EC50 (Daphnia magna (Water flea), 21 D): 44 mg/l

NOEC (Daphnia magna (Water flea), 21 D): 5.1 mg/l

**Toxicity to sediment/soil dwelling organisms**

EC50 (Chironomus sp. (midge), 28 day): > 100 mg/kg

**Mobility** Not available

**Persistence and degradability**

**Biodegradation**

Ready biodegradation (43 D): 0 %; Not Readily Biodegradable - unlikely to undergo rapid biodegradation in the environment

**Stability in water**

Hydrolysis (25 °C, pH 9): Degree of hydrolysis - 28 D (0 %); Stable in water.

Photolysis ( pH 5): Half-life - 13.8 D

Photolysis ( pH 7): Half-life - 12.5 D

Photolysis: Half-life - 10.7 D; with humic acid

**sorption/desorption**

Koc (soil) : 537 - 4,130

Koc (Activated Sludge) : 279

**Bioaccumulative potential**

Log Octanol/Water Partition Coefficient [log Kow]: 3.47 (pH 5), 3.298 (pH 7), 3.23 (pH 9)

## *12. ECOLOGICAL INFORMATION*

**PBT and vPvB Assessment:**

Does not fulfill PBT or vPvB criteria

## *13. DISPOSAL CONSIDERATIONS*

| | |
|---|---|
| Advice On Disposal And Packaging | Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements. This information presented only applies to the material as supplied. |
| Other information | Disposal by incineration is recommended. |

## *14. TRANSPORT INFORMATION*

This material is not a dangerous good for the purpose of transportation in all modes.

## *15. REGULATORY INFORMATION*

**United States of America**

| | |
|---|---|
| 313 Toxic Release Inventory | No components listed on the SARA 313 inventory. |
| TSCA Inventory | Not listed. Food, drug and cosmetic products are exempt from TSCA. |
| Regulatory Authorizations and Restrictions: | Not available |

## *16. OTHER INFORMATION*

*Text of H-code(s) mentioned in Section 3.*

| | |
|---|---|
| H318 | Causes serious eye damage. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |

*Recommended Restrictions for Use:*

Not available

*SDS preparation information*

| | |
|---|---|
| Prepared by | Global Environment, Health, Safety, and Sustainability 1-732-227-7380 |
| Prepared on | 22.01.2020 DD/MM/YYYY |
| | This Safety Data Sheet has been revised. This data sheet contains changes from the previous version in section(s): 4, 7, 11, 15, and 16. |

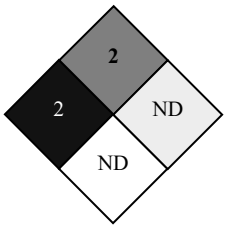
*Other information*

HMIS

| | |
|---|---|
| Health | 2* |
| Flammability | 2 |
| Reactivity | Not Determined (ND) |
| Personal protective equipment | See Section 8. |

NFPA

| | |
|---|---|
| Health | 2 |
| Fire | 2 |
| Reactivity | ND |
| Special | ND |




*Country- Specific Emergency Phone Numbers*

| Country | Local # or Toll Free in Country* | Greeting Language | Country | Local # or Toll Free in Country* | Greeting Language |
|---|---|---|---|---|---|
| **AMERICAS** | | | Latvia (Riga) | +(371)-66165504 | Latvian |
| Argentina (Buenos Aires) | +(54)-1159839431 | Latin American Spanish | Lithuania (Vilnius) | +(370)-52140238 | Lithuanian |
| Brazil (Rio De Janeiro) | +(55)-2139581449 | Portuguese | Luxembourg | +(352)-20202416 | French, German, Luxembourgish |
| Cayman Islands | +(1)-345-749-8392 | English | Netherlands | +(31)-858880596 | Dutch |
| Chile (Santiago) | +(56)-225814934 | Latin American Spanish | Norway (Oslo) | +(47)-21930678 | Norwegian |
| Colombia * | 01800-710-2151 | Latin American Spanish | Poland (Warsaw) | +(48)-223988029 | Polish |
| Costa Rica* | +(506)-40003869 | Latin American Spanish | Portugal | +(351)-308801773 | Portuguese |
| Mexico* | 01-800-681-9531 | Latin American Spanish | Romania | (+40)-37-6300026 | Romanian |
| Panama | +(507)-8322475 | Latin American Spanish | Russia* | 8-800-100-6346 | Russian |
| Peru (Lima) | +(51)-17071295 | Latin American Spanish | Slovakia (Bratislava) | +(421)-233057972 | Slovak |
| Trinidad and Tobago* | +(1)-868-224-5716 | English | Slovenia (Ljubljana) | +(386)-18888016 | Slovene/Slovenian |
| **EUROPE** | | | Spain (Barcelona) | +(34)-931768545 | European Spanish |
| | | | Spain* | 900-868538 | European Spanish |
| Austria (Vienna) | +(43)-13649237 | German | Sweden (Stockholm) | +(46)-852503403 | Swedish |
| Belgium (Brussels) | +(32)-28083237 | French, Flemish, German | Switzerland (Zurich) | +(41)-435082011 | Swiss German, French and Italian |
| Bulgaria (Plovdiv) | +(359)-32570104 | Bulgarian | Turkey (Istanbul) | +(90)-212-7055340 | Turkish |
| Croatia (Zagreb) | +(385)-17776920 | Croatian | Ukraine | +(380)-947101374 | Ukrainian |
| Czech Republic (Prague) | +(420)-228880039 | Czech | UK (London) | +(44)-870-8200418 | English |
| Finland (Helsinki) | +(358)-942419014 | Finnish | **EAST ASIA** | | |
| France | +(33)-975181407 | French | China | 86-21-33235036 | Mandarin |
| Germany * | 0800-181-7059 | German | Hong Kong* | 800-968-793 | Cantonese |
| Denmark | +(45)-69918573 | Danish | Japan | +(81)-345209637 | Japanese |
| Estonia | +(372-6681294 | Estonian | Singapore | +(65)-31581349 | English and Mandarin |
| Germany (Frankfurt) | +(49)-69643508409 | German | South Korea | +(82) 070-7686-0086 | Korean |
| Greece (Athens) | +(30)-2111768478 | Greek | **AUSTRALIA & OCEANIA** | | |
| Hungary (Budapest) | +(36)-18088425 | Hungarian | Australia (Sydney) | +(61)-290372994 | English |
| Italy * | 800-789-767 | Italian | New Zealand* | +(64)-98010034 | English |
| Italy (Milan) | +(39)-245557031 | Italian | India * | 000-800-100-7141 | Hindi |
| *Phone numbers for countries marked with an asterisk must be dialed within the country. | | | | | |

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