

Safety Data Sheet



Bristol-Myers Squibb Company

1. IDENTIFICATION													
<i>Product Information</i>													
Product name	Daklinza (Daclatasvir Dihydrochloride) Film Coated Tablets, 30mg - 90 mg												
Version	2.2, 30.06.2016												
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.												
Synonyms	Daklinza (Daclatasvir hydrochloride) Film Coated Tablets, 30mg - 90 mg; BMS-790052-05 Film Coated Tablets, 30mg - 90mg												
Other information	Project Name: 070P5												
Intended Uses	This material is a finished drug product for patient use. It is used for treatment of hepatitis C virus.												
<i>Company/Undertaking Identification</i>													
Address	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"><u>USA</u></td> <td style="width: 33%;"><u>Ireland</u></td> </tr> <tr> <td>Bristol-Myers Squibb Company</td> <td>Bristol-Myers Squibb Company</td> </tr> <tr> <td>P.O. Box 191</td> <td>Swords Laboratories, Watery Lane</td> </tr> <tr> <td>New Brunswick, New Jersey 08903</td> <td>Swords, Ireland</td> </tr> <tr> <td>United States of America</td> <td>MG-GBS-MSDS-Request@bms.com</td> </tr> <tr> <td>1-800-332-2056</td> <td>353-1813-9456</td> </tr> </table>	<u>USA</u>	<u>Ireland</u>	Bristol-Myers Squibb Company	Bristol-Myers Squibb Company	P.O. Box 191	Swords Laboratories, Watery Lane	New Brunswick, New Jersey 08903	Swords, Ireland	United States of America	MG-GBS-MSDS-Request@bms.com	1-800-332-2056	353-1813-9456
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Emergency Phone No.	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">USA (also Canada, Puerto Rico and the Virgin Island): 1-800-424-9300</td> <td style="width: 33%;"><u>Ireland</u>: 353-1813-9456</td> </tr> <tr> <td colspan="2">Other Countries: See "Section 16" for country-specific emergency phone numbers from CHEMTREC.</td> </tr> </table>	USA (also Canada, Puerto Rico and the Virgin Island): 1-800-424-9300	<u>Ireland</u> : 353-1813-9456	Other Countries: See "Section 16" for country-specific emergency phone numbers from CHEMTREC.									
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Other Countries: See "Section 16" for country-specific emergency phone numbers from CHEMTREC.													

2. HAZARDS IDENTIFICATION	
Classification and Labelling Common to All Jurisdictions	
Classification	Serious Eye Damage/Eye Irritation - Category 2 Skin Sensitization - Category 1B Carcinogenicity - Category 2 Specific Target Organ Systemic Toxicity (Single Exposure) - Category 3
Symbol	
Hazard Statements	Causes serious eye irritation. May cause an allergic skin reaction Suspected of causing cancer. (inhalation). May cause respiratory irritation .
Precautionary Statements	Do not breathe dust. Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection.

2. HAZARDS IDENTIFICATION	
	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Classification and Labelling for Specific Jurisdictions	
USA	
Classification	Specific Target Organ Systemic Toxicity (Repeated Exposure) - Category 1
Signal Word	Danger
Hazard Statements	Causes damage to organs (bone marrow, liver, adrenal glands, spleen, cardiovascular system, gastrointestinal tract, kidney, skin, lungs) through prolonged or repeated exposure.
Precautionary Statements	Do not eat, drink or smoke when using this product.
EU	
Classification	Specific Target Organ Systemic Toxicity (Repeated Exposure) - Category 2
Signal Word	Warning
Hazard Statements	May cause damage to organs (bone marrow, liver, adrenal glands, spleen, cardiovascular system, gastrointestinal tract, kidney, skin, lungs) through prolonged or repeated exposure.
UN	
Classification	Specific Target Organ Systemic Toxicity (Repeated Exposure) - Category 1
Signal Word	Danger
Hazard Statements	Causes damage to organs (bone marrow, liver, adrenal glands, spleen, cardiovascular system, gastrointestinal tract, kidney, skin, lungs) through prolonged or repeated exposure.
Precautionary Statements	Do not eat, drink or smoke when using this product.
Other information	Employees with Hepatitis C 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)	
<i>Hazardous components</i>					
Daclatasvir	< 22 %	Trade Secret	--	H319	--

Dihydrochloride (BMS-790052-05)				H317 H335 H373	
Microcrystalline Cellulose	< 45 %	9004-34-6	232-674-9	H335	--
Titanium Dioxide	0.1 - 1.5 %	13463-67-7	236-675-5	H351 H335 H372 H413	--
<i>Other ingredients</i>					
Non-Hazardous Ingredients	< 55 %	Not available	--	--	--
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. If eye irritation persists, get medical advice/attention.
Skin contact	If ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs, seek medical advice/attention. Wash contaminated clothing before re-use.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
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: Hepatitis C infection. Employees with Hepatitis C 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 Hepatitis C should consult with an occupational health physician to address any potential concerns. Refer to Section 11.
Medical Surveillance	The need for a pre-placement 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 blood test for liver function, a complete blood count with differential, a blood test for kidney function. For employees with Hepatitis C 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. 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 Unsuitable extinguishing media: Do NOT use water jet.

5. FIRE-FIGHTING MEASURES

Protection of Firefighters	<p>Specific hazards: Refer to HAZARDS IDENTIFICATION section for a description of hazards for this material.</p> <p>Protective equipment: Use personal protective equipment. In the event of fire, wear self-contained breathing apparatus.</p> <p>Hazardous Combustion Products: carbon oxides (COx), nitrogen oxides (NOx), and, gaseous hydrogen chloride (HCl).</p> <p>Further Information: HCl gas can form flammable or explosive mixtures with alcohols or metals. In the event of fire and/or explosion do not breathe fumes.</p>
Other information	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.
Cleanup Methods	Contain and collect spillage and place in container for disposal according to local regulations (see Section 13). Use a HEPA vacuum or moisten materials to minimize dust generation during pick-up. Clean area with detergent and water after spill pick-up, if appropriate. Handle waste materials, including gloves, protective clothing, contaminated spill cleanup material, etc., as appropriate for chemically and pharmacologically similar materials.

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. Prevent release to drains and waterways.
Container Requirements	Store in sturdy containers appropriate to maintain the integrity of this material for its intended use. Keep container tightly closed.
Storage Conditions	Store at 15 - 30°C. Protect against light. Keep away from heat, sparks and flames. Store in well-ventilated place.
Specific use(s)	Refer to Section 1

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)	Company Guideline	ACGIH	Germany OEL	UK MEL
Daclatasvir Dihydrochloride (BMS-790052-05)	20 µg/m3	--	--	--
Microcrystalline Cellulose		10 mg/m3 TWA	--	--
Magnesium Stearate		10 mg/m3 8 hour-TWA	--	--

8. EXPOSURE CONTROLS / PERSONAL PROTECTION	
Titanium Dioxide	10 mg/m ³ TWA -- --
Talc	2 mg/m ³ TWA -- --
Microcrystalline Cellulose	Occupational Exposure Limits have been established by: - Belgium - Switzerland - Estonia - Spain - France - Ireland - Portugal - Latvia
Magnesium Stearate	Occupational Exposure Limits have been established by: - Belgium - Spain - Ireland - Portugal - Sweden
Titanium Dioxide	Occupational Exposure Limits have been established by: - Austria - Belgium - Switzerland - Denmark - Estonia - Spain - France - Greece - Ireland - Norway - Poland - Portugal - Sweden - Latvia
Talc	Occupational Exposure Limits have been established by: - Austria - Belgium - Switzerland - Czech Republic - Denmark - Estonia - Spain - Finland - Greece - Hungary - Ireland - The Netherlands - Norway - Poland - Portugal - Sweden
Recommended Industrial Hygiene Monitoring Methods	Contact the Bristol-Myers Squibb AIHA accredited Industrial Hygiene Laboratory at (USA) 732-227-6338. 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.
EXPOSURE CONTROLS / PERSONAL PROTECTION FOR MATERIAL AS SUPPLIED	
This formulation contains an active pharmaceutical ingredient (API) with the guideline limit noted above. To keep the API below the recommended guideline, the material as supplied should be controlled during handling to limit total airborne aerosol exposure to: 95 µg/m ³ .	
Engineering Controls and Ventilation	FOR MANUFACTURING PROCESSES (BULK): Use process enclosures, containment technology, or other engineering controls to keep airborne levels below recommended exposure limit. When handling quantities up to 15 milligrams, a standard laboratory with general laboratory dilution ventilation (e.g. 6-12 air changes per hour) is appropriate. When handling quantities from 15 milligrams to 1 kilogram, work in a standard laboratory using a fume hood, biological safety cabinet(Class II, all types), or approved vented enclosure. 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 direct coupling and closed transfer systems for all bulk transfers. Use dust tight valves as appropriate. HEPA filtration of local exhaust ventilation (LEV) is required. FOR CLINICAL SETTING USE (DRUG PRODUCT): When handling small quantities in a clinical setting, good room ventilation is desirable. Specific engineering controls should not be needed. If significant dust is generated, use process enclosures, containment technology, or other engineering controls to keep airborne levels below recommended exposure limit. When handling broken or crushed tablets or capsules, ensure worker exposure is below the recommended exposure limit.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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 when handling quantities up to 1 kilogram. For quantities over 1 kilogram, wear laboratory coat or coverall of low permeability. Wear a laboratory coat (EN 340) when handling quantities up to 1 kilogram. 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 465/1149-1).
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 and green
Form	film coated tablets

Odour

Odour	Not available
Odor Threshold	Not available

pH	Not available
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Other information

Bulk density	Not available
Evaporation rate	Not available
Molecular formula	Not applicable
Hydrolysis/Photolysis	Not available
Hygroscopicity	Not available
Molecular Weight	Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

Log Octanol/Water Partition Coefficient [log Kow]	Not available
Surface Tension	Not available
pKa	Not available
Particle Size	Not available
Solubility, Water	Not available
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	Not available
Oxidizing Potential	Non-oxidizing

Vapor Properties

Vapor Density	Not available
Vapor Pressure	Not available
Saturated Vapor Concentration	Not available

10. STABILITY AND REACTIVITY

Stability

Chemical Stability	Stable at room temperature.
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, gaseous hydrogen chloride (HCl).
Hazardous reactions	None known.

Sensitivity to static discharge/Dust exp.

Summary Statements	Although material has not been specifically tested, fine dust suspended in air in sufficient concentration and in the presence of an ignition source may pose a potential explosion hazard. Provide appropriate bonding and grounding protection to control static charge. Powder handling equipment such as dust collectors, dryers, and mills may require additional protective measures (e.g. explosion venting, inerting, etc.).
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11. TOXICOLOGICAL INFORMATION

Routes of Entry	Ingestion, inhalation, Eye contact, Skin contact
Eye Irritation	<u>Daclatasvir Dihydrochloride (BMS-790052-05)</u> Irritating to eyes. <u>Microcrystalline Cellulose</u> Mildly and/or transiently irritating to eyes <u>Titanium Dioxide</u> Mildly and/or transiently irritating to eyes
Skin Irritation	<u>Daclatasvir Dihydrochloride (BMS-790052-05)</u> Not irritating to skin. <u>Microcrystalline Cellulose</u> Not irritating to skin. <u>Titanium Dioxide</u> Mildly and/or transiently irritating to skin.
Respiratory Irritation	<u>Daclatasvir Dihydrochloride (BMS-790052-05)</u> Respiratory irritant - based on pH. <u>Microcrystalline Cellulose</u> Irritating to respiratory tract. <u>Titanium Dioxide</u> Irritating to respiratory tract.
Sensitization	<u>Daclatasvir Dihydrochloride (BMS-790052-05)</u> Weak dermal sensitizer Local lymph node assay EC3 = 44 % <u>Microcrystalline Cellulose</u> Not a dermal sensitizer <u>Titanium Dioxide</u> Not a dermal sensitizer
Acute Toxicity Study	Acute Oral <u>Daclatasvir Dihydrochloride (BMS-790052-05)</u> NOEL (mouse): 1,000 mg/kg LD50 (rat, males and females): > 1,000 mg/kg low exposure effects include (<= 300 mg/kg): decreased food consumption, decreased body weight. No mortality occurred. LD50 (dog, males and females): > 150 mg/kg low exposure effects include (<= 300 mg/kg): decreased food consumption. No mortality occurred. NOEL (monkey): 150 mg/kg <u>Microcrystalline Cellulose</u>

11. TOXICOLOGICAL INFORMATION

LD50 (rat, males and females): > 5,000 mg/kg

Titanium Dioxide

LD50 (rat): > 10,000 mg/kg

Acute Dermal

Microcrystalline Cellulose

LD50 (rat, males and females): > 2,000 mg/kg

Titanium Dioxide

LD50 (rabbit): > 10,000 mg/kg

Acute inhalation toxicity

Microcrystalline Cellulose

LC50 (rat, males and females): > 5350 mg/m³/4 H

Titanium Dioxide

LC50 (rat): > 2.29 mg/l/4 H

Acute toxicity (other routes of administration)

Microcrystalline Cellulose

LD50 (rat, males, intraperitoneal): > 3,150 mg/kg

Repeated Dose
Toxicity

Daclatasvir Dihydrochloride (BMS-790052-05)

oral (daily) exposure time = 1 - 9 months rat, dog, monkey study (males and females):
NOEL (1 month, dog) = 3 mg/kg; Low dose effects include (< = 100 mg/kg): clinical signs, decreased body weight, decreased red blood cell count, decreased lymphocytes, changes in serum chemistry, lymphoid depletion, lymphoid hyperplasia, adrenal gland toxicity, increased liver enzymes, liver toxicity, increased organ weights included: adrenal glands. Low dose microscopic effects include: bone marrow, liver, adrenal glands, spleen, thymus.

Titanium Dioxide

Assessment Repeat Dose Toxicity

Several studies were conducted. See "Human Experience".

Genetic Toxicity

Daclatasvir Dihydrochloride (BMS-790052-05)

In vitro

Ames reverse-mutation assay -- negative
Chromosome aberration test in vitro -- negative
Mutagenicity (micronucleus test) -- negative

in vivo

3 days oral, micronucleus assay (rat) -- negative

Microcrystalline Cellulose

Mutagenicity Assessment

This material was negative in a battery of in vivo and in vitro genotoxicity assays.

Titanium Dioxide

Mutagenicity Assessment

This material was negative in a battery of in vivo and in vitro genotoxicity assays.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity Daclatasvir Dihydrochloride (BMS-790052-05)
 6 months oral mouse study : Tumor NOAEL = 300 mg/kg (males and females). No treatment-related tumors were observed.
 2 years oral rat study : Tumor NOAEL = 50 mg/kg (males and females). No treatment-related tumors were observed.

Carcinogenicity Assessment

This material did not show carcinogenic potential in animal studies.

Microcrystalline Cellulose

Carcinogenicity Assessment

This material did not show carcinogenic potential in animal studies. Not classifiable as to its carcinogenicity to humans.

Titanium Dioxide

Carcinogenicity Assessment

Tumors were observed at high dose in animal studies by inhalation and intratracheal administration. Tumors were not observed by other routes.

Carcinogenicity	ACGIH	IARC	NTP
Daclatasvir Dihydrochloride (BMS-790052-05)	--	--	--
Microcrystalline Cellulose	--	--	--
Titanium Dioxide	A4	2B	--

Reproductive Toxicity Daclatasvir Dihydrochloride (BMS-790052-05)
 oral Study of Fertility and Early Embryonic Development (rat)
 (parent, males and females) NOAEL =

(males) = 50 mg/kg/day

(females) = 200 mg/kg/day
 (F1 offspring) NOAEL = 200 mg/kg/day
 Paternal effects include: sperm abnormalities, decreased organ weights included; prostate.

Assessment Reproductive Toxicity

Reproductive effects were observed only at overtly toxic doses. This compound and/or its metabolites may be excreted into the milk.

Microcrystalline Cellulose

Assessment Reproductive Toxicity

Data indicate that this compound is not a reproductive hazard.

Developmental Toxicity Daclatasvir Dihydrochloride (BMS-790052-05)
 Study of Embryo-Fetal Development (rat)

11. TOXICOLOGICAL INFORMATION

(parent, females) NOAEL = 50 mg/kg/day
(F1 offspring) NOAEL = 50mg/kg/day
Fetal effects include: fetal malformations, decreased body weight, mortality. Maternal effects include: decreased body weight, decreased food consumption, clinical signs, mortality. Adverse effects on the fetus occur only at doses that also cause maternal toxicity.

Study of Embryo-Fetal Development (rabbit)
(parent, females) NOAEL = 20mg/kg/day
(F1 offspring) NOAEL = 20mg/kg/day
Fetal effects include: fetal malformations, decreased body weight, mortality. Maternal effects include: decreased body weight, decreased food consumption, clinical signs, mortality. Adverse effects on the fetus occur only at doses that also cause maternal toxicity.

Study of Pre- and Postnatal Development (rat)
(parent, females) NOAEL = 50mg/kg/day
(F1 offspring) NOAEL = 50 mg/kg/day
Adverse effects on the offspring occur only at doses that also cause maternal effects.

Juvenile Studies (rat)
NOAEL = 50mg/kg/day
Offspring effects include: decreased birth weight, clinical signs, changes in clinical chemistry parameters, increased organ weights included: liver, adrenal glands.
Microscopic changes were observed in the following organs: adrenal glands

Developmental Toxicity Assessment

Not a selective developmental toxicant. Developmental effects were observed only at maternal overtly toxic doses.

Microcrystalline Cellulose

Developmental Toxicity Assessment

Available data do not indicate a potential for selective developmental toxicity.

Human experience

Experiences with Human Exposure

Daclatasvir Dihydrochloride (BMS-790052-05)

Clinical trial(s) Clinical trials – Monotherapy (daily) 200 . low exposure - acute effects include: headache, rash, abdominal distention, dizziness, increased liver enzymes, flatulence, abdominal pain, back pain, fatigue, insomnia, viral resistance.

Titanium Dioxide

Incident report(s) worker exposure low exposure - acute effects include: cough, breathing difficulties, rhinitis, Irritating to respiratory tract..

Target Organs

Daclatasvir Dihydrochloride (BMS-790052-05)

bone marrow, liver, adrenal glands, spleen, cardiovascular system, gastrointestinal tract, kidney, skin

Titanium Dioxide

lungs

Symptoms

Daclatasvir Dihydrochloride (BMS-790052-05)

11. TOXICOLOGICAL INFORMATION

rash, redness and swelling of eyes, rash, redness and swelling of skin, labored respiration, noisy respiration, chest pain, breathing difficulties, shortness of breath, lung inflammation, See "Human Experience".

Microcrystalline Cellulose

labored respiration, noisy respiration, chest pain, breathing difficulties, shortness of breath, lung inflammation

Pharmacokinetics/
Toxicokinetics

Daclatasvir Dihydrochloride (BMS-790052-05)

Absorption: Data available upon request.

Distribution: Data available upon request.

Metabolism: Data available upon request.

Elimination: Half-life = 12 - 15 Hour(s) (Human).

Other Toxicity
Information

Other Toxicity Tests

Daclatasvir Dihydrochloride (BMS-790052-05)

Single dose telemetry study (dog) : NOAEL = 15 mg/kg increase in blood pressure

Single dose telemetry study (rabbit) : NOAEL = 10 mg/kg cardiac disorders

in vivo phototoxicity study : negative

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Acute Toxicity to Fish

Daclatasvir Dihydrochloride (BMS-790052-05)

LC50 (Lepomis macrochirus, 96 H): > 6.8 mg/l. (limit of solubility)

Microcrystalline Cellulose

LC50 (Oncorhynchus mykiss (rainbow trout), 96 H): > 100 mg/l.

Acute Toxicity to Aquatic Invertebrates

Microcrystalline Cellulose

LC50 (Daphnia, 48 H): > 100 mg/l.

Titanium Dioxide

EC50 (Daphnia magna (Water flea), 48 H): > 100 mg/l.

Toxicity to aquatic plants

Daclatasvir Dihydrochloride (BMS-790052-05)

EC50 (Pseudokirchneriella subcapitata (formerly Selenastrum capricornutum), Algae growth rate, 72 H): > 1.3 mg/l (limit of solubility)

NOEC (Pseudokirchneriella subcapitata (formerly Selenastrum capricornutum), Algae growth rate, 72 H): 1.3 mg/l (limit of solubility)

Microcrystalline Cellulose

EC50 (Algae, 96 H): > 100 mg/l

Toxicity to microorganisms

Daclatasvir Dihydrochloride (BMS-790052-05)

Respiration inhibition, EC50 (3 H): > 524 mg/l

Chronic toxicity to fish

Daclatasvir Dihydrochloride (BMS-790052-05)

NOEC (Pimephales promelas (fathead minnow), 28 D): 0.72 mg/l(limit of solubility)

LOEC (Pimephales promelas (fathead minnow), 28 D): > 0.72 mg/l(limit of solubility)

Chronic toxicity to aquatic invertebrates

Daclatasvir Dihydrochloride (BMS-790052-05)

NOEC (Daphnia magna (Water flea), 21 D): 2.3 mg/l (limit of solubility)

LOEC (Daphnia magna (Water flea), 21 D): > 2.3 mg/l (limit of solubility)

Toxicity to sediment/soil dwelling organisms

Daclatasvir Dihydrochloride (BMS-790052-05)

EC50 (Chironomus sp. (midge)): > 100 mg/kg soil dm

Mobility Not available

Persistence and degradability

Biodegradation

Daclatasvir Dihydrochloride (BMS-790052-05)

Not readily biodegradable.

Microcrystalline Cellulose

Inherently biodegradable - biodegrades in the environment.

Daclatasvir Dihydrochloride (BMS-790052-05)

Koc (soil) : 266,362

Koc (Activated Sludge) : 2,269

Bioaccumulative potential

Daclatasvir Dihydrochloride (BMS-790052-05)

Accumulation in aquatic organisms is unlikely.

PBT and vPvB Assessment:

Daclatasvir Dihydrochloride (BMS-790052-05)

Does not fulfill PBT or vPvB criteria

Microcrystalline Cellulose

Not available

12. ECOLOGICAL INFORMATION

Titanium Dioxide
 Not available

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.

EU Regulation (EC) No 1272/2008)

DRUG PRODUCT

Classification Medicinal products are exempt from classification and labeling requirements under EU Regulation (EC) No 1272/2008.

Regulatory Authorizations and Restrictions: Not available

16. OTHER INFORMATION

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

H317	May cause an allergic skin reaction
H319	Causes serious eye irritation.
H335	May cause respiratory irritation
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H413	May cause long lasting harmful effects to aquatic life.

Recommended Restrictions for Use:

Not available

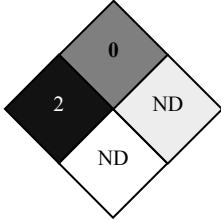
SDS preparation information

Prepared by Research and Development Environment, Health and Safety 1-732-227-7380

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This Safety Data Sheet has been revised. This data sheet contains changes from the previous version in section(s): 1.

Other information

HMIS	Health	2*
	Flammability	0
	Reactivity	Not Determined (ND)
	Personal protective equipment	See Section 8.
NFPA		
Health	2	
Fire	0	
Reactivity	ND	
Special	ND	

*Country- Specific Emergency
 Phone Numbers*

CHEMTREC In-Country Dial Numbers	Local # Provided in Country	Toll Free in Country*	Greeting Language
CHEMTREC South Africa*		0-800-983-611	English
CHEMTREC Argentina (Buenos Aires)	+(54)-1159839431		Latin American Spanish
CHEMTREC Brazil (Rio De Janeiro)	+(55)-2139581449		Portuguese
CHEMTREC Chile (Santiago)	+(56)-25814934		Latin American Spanish
CHEMTREC Colombia *		01800-710-2151	Latin American Spanish
CHEMTREC Mexico*		01-800-681-9531	Latin American Spanish
CHEMTREC Peru (Lima)	+(51)-17071295		Latin American Spanish
CHEMTREC China*	4001-204937		Mandarin
CHEMTREC Hong Kong (Hong Kong)*		800-968-793	Cantonese
CHEMTREC India *		000-800-100-7141	Hindi
CHEMTREC Indonesia *		001-803-017-9114	Indonesian
CHEMTREC Japan (Tokyo)	+(81)-345209637		Japanese
CHEMTREC Malaysia *		1-800-815-308	Malay
CHEMTREC Philippines *		1-800-1-116-1020	Tagalog
CHEMTREC Singapore*		800-101-2201	Mandarin
CHEMTREC Singapore	+(65)-31581349		Mandarin
CHEMTREC South Korea*		00-308-13-2549	Korean
CHEMTREC Taiwan*		00801-14-8954	Mandarin
CHEMTREC Thailand *		001-800-13-203-9987	Thai
CHEMTREC Vietnam (Ho Chi Minh City)	+(84)-838012436		Vietnamese
CHEMTREC Australia (Sydney)	+(61)-290372994		English
CHEMTREC Belgium (Brussels)	+(32)-28083237		French and Flemish
CHEMTREC Czech Republic (Prague)	+(420)-228880039		Czech
CHEMTREC France	+(33)-975181407		French
CHEMTREC Germany *		0800-181-7059	German
CHEMTREC Hungary (Budapest)	+(36)-18088425		Hungarian
CHEMTREC Italy *		800-789-767	Italian
CHEMTREC Italy (Milan)	+(39)-0245557031		Italian
CHEMTREC Netherlands	+(31)-858880596		Dutch
CHEMTREC Poland (Warsaw)	+(48)-223988029		Polish
CHEMTREC Spain*		900-868538	European Spanish
CHEMTREC Sweden (Stockholm)	+(46)-852503403		Swedish
CHEMTREC Switzerland (Zurich)	+(41)-435016715		German
CHEMTREC UK (London)	+(44)-870-8200418		English
CHEMTREC Bahrain (Bahrain)	+(973)-16199372		Arabic
CHEMTREC Israel (Tel Aviv)	+(972)-37630639		Hebrew

*Phone numbers for countries marked with an asterisk must be dialed within the country

The information contained in this SDS is believed to be accurate and represents the best information reasonably available at the time of preparation. However, we make no warranty, express or implied, with respect to such information, and we assume no liability from its use.