SAFETY DATA SHEET

1. Identification

Product identifier **ZOFRAN ODT ORALLY DISINTEGRATING TABLETS**

Other means of identification

Synonyms ZOFRAN ORALLY DISINTEGRATING TABLETS 4 MG * ZOFRAN ORALLY DISINTEGRATING TABLETS 8 MG * ZOFRAN MELT 4 MG * ZOFRAN ZYDIS * ZOFRAN ZYDIS WAFER * IZOFRAN ZYDIS TABLETS * ZOPHREN ZYDIS TABLETS * ONDANSETRON BASE TABLETS * ONDANSETRON BASE, FORMULATED PRODUCT

Recommended use Medicinal Product

This safety data sheet is written to provide health, safety and environmental information for people handling this formulated product in the workplace. It is not intended to provide information relevant to medicinal use of the product. In this instance patients should consult prescribing information/package insert/product label or consult their pharmacist or physician. For health and safety information for individual ingredients used during manufacturing, refer to the appropriate safety data sheet for each ingredient.

Recommended restrictions No other uses are advised.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

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::
US / International toll call +1 703 527 3887
available 24 hrs/7 days; multi-language response

2. Hazard(s) identification

Classified hazards

Exempt from requirements - product regulated as a medicinal product, cosmetic product or medical device.

Label elements

Exempt from requirements - product regulated as a medicinal product, cosmetic product or medical device.

Hazard(s) not otherwise classified (HNOC)

Exempt from requirements - product regulated as a medicinal product, cosmetic product or medical device.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
ONDANSETRON BASE	ONDANSETRON * GR 38032X * 113 (GW ACN) * 1,2,3,9-TETRAHYDRO-3-((2-METHYLIMIDAZOLE-1-YL)METHYL)-4H-CARBAZOL-4-ONETETRAHYDRO	99614-02-5	29 - 30
MANNITOL	D-MANNITOL * 1,2,3,4,5,6-HEXANEHEXOL * MANNA SUGAR * MANNITE * OSMITROL * BP-686 * MANNITOL, D- * DIOSMOL * MANITON-S * MANNIDEX * MANNIGEN * MANNISTOL * OSMOSOL * D-MANNITE * CORDYCEPIC ACID * D-(-)-MANNITOL * MANNITOLUM * OSMOSAL * ISOTOL * C6H14O6 * OHS13660 * RTECS OP2060000	69-65-8	27 - 28

Chemical name	Common name and synonyms	CAS number	%
ASPARTAME	ASPARTYLPHENYLALANINE METHYL ESTER * NUTRASWEET	22839-47-0	4 - 5
SODIUM METHYL PARABEN	SODIUM METHYL PARA-HYDROXYBENZOATE * BENZOIC ACID, 4-HYDROXY-, METHYL ESTER, SODIUM SALT * SODIUM METHYL P-HYDROXYBENZOATE * BENZOIC ACID, P-HYDROXY-, METHYL ESTER, SODIUM SALT * SODIUM, (P-CARBOXYPHENOXY)-, METHYL ESTER * SODIUM 4-CARBOMETHOXYPHENOLATE * SOLPAROL * SODIUM METHYL HYDROXYBENZOATE * SODIUM METHYL 4-HYDROXYBENZOATE * METHYLPARABEN SODIUM * METHYL P-HYDROXYBENZOATE, SODIUM SALT * 4-HYDROXYBENZOIC ACID, METHYL ESTER, SODIUM SALT * P-HYDROXYBENZOIC ACID, METHYL ESTER, SODIUM SALT * PARA-HYDROXYBENZOIC ACID, METHYL ESTER, SODIUM SALT * NIPAGIN(R) M SODIUM * SODIUM METHYLPARABEN * METHYL (P-CARBOXYPHENOXY)SODIUM * NATRIUM-4-(METHOXYCARBONYL)PHENOLAT * GR30517A	5026-62-0	<1
Other components below reportable levels			37 - 38

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Skin contact Get medical attention if symptoms occur. Take off contaminated clothing and wash before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion If swallowed, rinse mouth with water (only if the person is conscious). If ingestion of a large amount does occur, call a poison control center immediately.

Most important symptoms/effects, acute and delayed The following adverse effects have been noted with therapeutic use of this material: headache; flushing; constipation; abnormal nervous system sensations; burning; symptoms of hypersensitivity (such as skin rash, hives, itching, and/or difficulty breathing).

Indication of immediate medical attention and special treatment needed No specific antidotes are recommended. Treat according to locally accepted protocols. For additional guidance, refer to the current prescribing information or to the local poison control information center.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Pre-placement and periodic health surveillance is not usually indicated. The final determination of the need for health surveillance should be determined by local risk assessment.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Stop the flow of material, if this is without risk. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities
Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

GSK

Components	Type	Value
ASPARTAME (CAS 22839-47-0)	8 HR TWA	5000 mcg/m3
	OHC	1
MANNITOL (CAS 69-65-8)	OHC	1
ONDANSETRON BASE (CAS 99614-02-5)	8 HR TWA	30 mcg/m3
	OHC	3
SODIUM METHYL PARABEN (CAS 5026-62-0)	8 HR TWA	5000 mcg/m3
	OHC	1

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An Exposure Control Approach (ECA) is established for operations involving this material based upon the OEL/Occupational Hazard Category and the outcome of a site- or operation-specific risk assessment.

Individual protection measures, such as personal protective equipment

Eye/face protection
If contact is likely, safety glasses with side shields are recommended.

Hand protection
The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Skin protection

Other
Wear suitable protective clothing.

Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. An occupational/industrial hygiene monitoring method has been developed for this material. For advice on suitable monitoring methods, seek guidance from a qualified environment, health and safety professional.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Tablet.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.

Solubility(ies)

Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Irritating and/or toxic fumes and gases may be emitted upon the products decomposition.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Harmful if swallowed.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Health injuries are not known or expected under normal use.
Eye contact	Health injuries are not known or expected under normal use. Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	The following adverse effects have been noted with therapeutic use of this material: headache; constipation; abnormal nervous system sensations; burning; flushing; symptoms of hypersensitivity (such as skin rash, hives, itching, and/or difficulty breathing).

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Components	Species	Test Results
MANNITOL (CAS 69-65-8)		
Acute		
Oral		
LD50	Rat	13.5 g/kg
ONDANSETRON BASE (CAS 99614-02-5)		
Acute		
Oral		
LD50	Rat	100 - 150 mg/kg Results from ondansetron HCl.
Chronic		
Oral		
LD	Rat	> 36 mg/kg/day Results from ondansetron HCl.
LOEL	Dog	1 mg/kg/day, 52 weeks Results from ondansetron HCl.
NOAEL	Rat	1 mg/kg/day, 18 months Results from ondansetron HCl.
SODIUM METHYL PARABEN (CAS 5026-62-0)		
Acute		
Oral		
LD50	Mouse	2 g/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Health injuries are not known or expected under normal use.

Corrosivity

ONDANSETRON BASE: 50 %, Results from ondansetron HCl. Formulated in soft paraffin.
Result: Non-irritant
Species: Guinea pig

Serious eye damage/eye irritation Health injuries are not known or expected under normal use. Direct contact with eyes may cause temporary irritation.

Eye

ONDANSETRON BASE: OECD 405, Results from ondansetron HCl.
Result: Severe Irritant
Species: Rabbit

Respiratory or skin sensitization

Respiratory sensitization Due to partial or complete lack of data the classification is not possible.

Skin sensitization This product is not expected to cause skin sensitization.

Maximisation assay (Magnusson and Kligman)

ZOFRAN ODT ORALLY DISINTEGRATING TABLETS: Result:

Sensitization

ONDANSETRON BASE: Split adjuvant assay, Results from ondansetron HCl.
Result: Negative
Species: Guinea pig

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Mutagenicity

ONDANSETRON BASE: Ames, Results from ondansetron HCl.
Result: Negative
Chromosomal Aberration Assay In Vitro, Results from ondansetron HCl.
Result: Positive

Mutagenicity

ONDANSETRON BASE	HPRT gene mutation in human lymphocytes, Results from ondansetron HCl. Result: Negative Micronucleus test, Results from ondansetron HCl. Result: Negative Species: Mouse V79 Cell Mutagenicity Assay, Results from ondansetron HCl. Result: Negative

Carcinogenicity Not classifiable as to carcinogenicity to humans.

ONDANSETRON BASE	ICH S1B, Results from ondansetron HCl. Result: Negative Species: Mouse ICH S1B, Results from ondansetron HCl. Result: Negative Species: Rat

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity Contains no ingredient listed as toxic to reproduction

Reproductivity

ONDANSETRON BASE	Embryofetal Development, Results from ondansetron HCl. Result: No effect Species: Rabbit Embryofetal Development, Results from ondansetron HCl. Result: No effect Species: Rat Fertility, Results from ondansetron HCl. Result: No effect Species: Rat Pre- and Post-natal development, Results from ondansetron HCl. Result: Negative Species: Rat

Specific target organ toxicity - single exposure Central nervous system.

Specific target organ toxicity - repeated exposure None known.

Aspiration hazard Not likely, due to the form of the product.

Further information Caution - Pharmaceutical agent.

12. Ecological information

Ecotoxicity Contains a substance which causes risk of hazardous effects to the environment. Very toxic to aquatic life with long lasting effects.

Components		Species	Test Results
ONDANSETRON BASE (CAS 99614-02-5)			
Aquatic			
Acute			
Activated Sludge Respiration	IC50	Residential sludge	> 802 mg/l, 3 hours OECD 209
Algae	EC50	Green algae (Selenastrum capricornutum)	0.7 mg/l, 72 hours Static ., OECD 201
	NOEC	Green algae (Selenastrum capricornutum)	0.25 mg/l, 72 hours Measured
Crustacea	EC50	Water flea (Daphnia pulex)	22 mg/l, 48 hours Static ., TAD 4.08
	NOEC	Water flea (Daphnia pulex)	13 mg/l, 48 hours Measured
Fish	EC50	Rainbow trout (Adult Oncorhyncus mykiss)	5.2 mg/l, 96 hours Static ., OECD 203
	NOEC	Rainbow trout (Adult Oncorhyncus mykiss)	2.1 mg/l, 96 hours Measured

Components		Species	Test Results
Chronic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	1 mg/l, 8 days Static renewal ., EPA 1002
	LOEC	Water flea (Ceriodaphnia dubia)	0.8 mg/l, 8 days
	NOEC	Water flea (Ceriodaphnia dubia)	0.3 mg/l, 8 days

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Photolysis

UV/visible spectrum wavelength

ONDANSETRON BASE	310 nm Measured, pH 5-9

Hydrolysis

Half-life (Hydrolysis-basic)

ASPARTAME	< 1 Days Measured

Half-life (Hydrolysis-neutral)

ONDANSETRON BASE	> 1 Years

Biodegradability

Percent degradation (Aerobic biodegradation-soil)

ONDANSETRON BASE	20.3 - 99.9 %, 64 days, Soil

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

MANNITOL	-3.1
ONDANSETRON BASE	0.8

Bioconcentration factor (BCF)

ASPARTAME	1 Estimated
MANNITOL	1 Estimated

Mobility in soil No data available.

Adsorption

Sludge/biomass distribution coefficient - log Kd

ONDANSETRON BASE	3.95 - 4.23 Calculated

Soil/sediment sorption - log Koc

ASPARTAME	1.78 Estimated
MANNITOL	0.7 Estimated
ONDANSETRON BASE	4.22 - 4.51 Measured

Mobility in general

Volatility

Henry's law

ASPARTAME	< 0 atm m^3/mol Estimated
MANNITOL	0 atm m3/mol

Distribution

Octanol/water distribution coefficient log DOW

ONDANSETRON BASE	0.23, pH 5 0.99, pH 7 1.26, pH 9

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN3077
UN proper shipping name	Environmentally hazardous substances, solid, n.o.s. (ONDANSETRON BASE TABLETS), MARINE POLLUTANT
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Not available.
Special provisions	8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33
Packaging exceptions	155
Packaging non bulk	213
Packaging bulk	240

IATA

UN number	UN3077
UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (ONDANSETRON BASE TABLETS)
Transport hazard class(es)	9
Subsidiary class(es)	-
Packaging group	III
Labels required	9
Environmental hazards	No.
ERG Code	9L
Special precautions for user	Not available.
Other information	
Cargo aircraft only	Allowed.
Passenger & cargo	Allowed.

IMDG

UN number	UN3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ONDANSETRON BASE TABLETS)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-F
Special precautions for user	Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	MARPOL Annex II applies to liquids used in a ship's operation that pose a threat to the marine environment. These materials may not be transported in bulk.

DOT; IATA; IMDG

Marine pollutant

General information Classifications are for the material when offered for transport as fully regulated. Depending on the specific transport details (Ship-From/Ship To locations, quantities being shipped, type of packaging and mode of transport) it may be possible to ship this material in a manner other than fully regulated. (One example is IATA Limited or Excepted Quantity. There are others.) Be sure to review all regulatory agency packaging instructions and special provisions, referenced in this section, to identify options applicable to the specifics of your shipment.

15. Regulatory information

US federal regulations One or more components are not listed on TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 08-11-2014

Revision date 08-11-2014

Version # 09

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 3
Flammability: 1
Physical hazard: 0

NFPA ratings
Health: 3
Flammability: 1
Instability: 0

References GSK Hazard Determination

Disclaimer 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.

Revision Information
Product and Company Identification: Product and Company Identification
Composition / Information on Ingredients: Undisclosed Ingredient Statement
Physical & Chemical Properties:
Ecological Information: Ecotoxicity
Regulatory Information: Risk Phrases - Class.
GHS: Classification