SAFETY DATA SHEET

1. Identification

Product identifier **ZypAdhera® for Injection**

Other means of identification

Item Code	VL7635, VL7636, QA509E, QA449S, VL7637, DT7635
CAS number	221373-18-8
Synonyms	Depot-OPM
LY Number	LY170053
LSN Number	426906

Recommended use Pharmaceutical

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	Eli Lilly and Company	
Address	Lilly Corporate Center Indianapolis, IN 46285 United States	
Telephone	Phone:	+1-317-276-2000
E-mail	lilly_msds@lilly.com	

Emergency phone number CHEMTREC: +1-800-424-9300

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 4
	Serious eye damage/eye irritation	Category 2B
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (Blood)

OSHA defined hazards Combustible dust

Label elements

Signal word Warning

Hazard statement

	May form combustible dust concentrations in air.
H317	May cause an allergic skin reaction.
H302	Harmful if swallowed.
H320	Causes eye irritation.
H373	May cause damage to organs (Blood) through prolonged or repeated exposure.
H336	May cause drowsiness or dizziness.

Precautionary statement

Prevention

P261	Avoid breathing dust.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P363	Wash contaminated clothing before reuse.

P337 + P313	If eye irritation persists: Get medical advice/attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

Storage Not available.

Disposal Not available.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Olanzapine Pamoate Monohydrate	Depot-OPM	221373-18-8	

4. First-aid measures

Inhalation Move to fresh air. Oxygen or artificial respiration if needed. Get medical attention immediately.

Skin contact Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

Eye contact In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Ingestion Give several glasses of water. Never give anything by mouth to a victim who is unconscious or is having convulsions. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed Irritating to eyes. May cause allergic skin reaction. May cause blood damage. Symptoms reported in olanzapine overdose include changes in heart rate and rhythm, slurred speech, reduced level of consciousness ranging from sedation to coma, convulsion, and muscle rigidity.

Indication of immediate medical attention and special treatment needed There is no specific antidote for olanzapine. Induction of emesis is not recommended. Standard procedures for management of overdose may be indicated (i.e. gastric lavage, administration of activated charcoal). The concomitant administration of activated charcoal was shown to reduce the oral bioavailability of olanzapine by 50 to 60%. Symptomatic treatment and monitoring of vital organ function should be instituted according to clinical presentation, including treatment of hypotension and circulatory collapse and support of respiratory function. Do not use epinephrine, dopamine, or other sympathomimetic agents with beta-agonist activity since beta stimulation may worsen hypotension.

General information In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

5. Fire-fighting measures

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

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical Hazardous decomposition products formed under fire conditions.

Special protective equipment and precautions for firefighters Wear self-contained breathing apparatus and protective clothing.

General fire hazards Dust may form explosive mixture with air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Do not breathe dust. See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up Vacuum material with appropriate dust collection filter in place. Be aware of potential for dust explosion when using electrical equipment. If vacuum is not available, lightly mist/wet material and remove by mopping or wet wiping.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent spilled material from flowing onto adjacent land or into streams, ponds, or lakes.

7. Handling and storage

Precautions for safe handling Keep formation of airborne dusts to a minimum. Avoid contact with eyes, skin, and clothing. Do not breathe dust. Use only with adequate ventilation. Wear personal protective equipment. Wash hands thoroughly after handling. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities Keep container tightly closed in a dry and well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits

Lilly (LEG)

Material	Type	Value	Form
Olanzapine Pamoate Monohydrate (CAS 221373-18-8)	STEG (15min)	114 ug/m3	(Olanzapine)
	TWA (12hrs)	38 ug/m3	(Olanzapine)
	TWA (8hrs)	50 ug/m3	(Olanzapine)

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

Appropriate engineering controls Open handling is not recommended. Use appropriate control measures such as fume hood, ventilated enclosure, local exhaust ventilation, or down-draft booth.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear goggles/face shield.

Skin protection

Hand protection Chemical-resistant gloves and impermeable body covering to minimize skin contact.

Other Chemical-resistant gloves and impermeable body covering to minimize skin contact.

Respiratory protection Use an approved respirator. Select appropriate respirator for physical characteristics of material. Select respirator with appropriate protection factor.

Thermal hazards Not available.

9. Physical and chemical properties

Appearance Solid

Physical state Solid.

Form Powder

Color Yellow

Odor Odorless

Odor threshold Not available.

pH Not available.

Melting point/freezing point 437 - 473 °F (225 - 245 °C) Decomposes

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not a flammable solid. (OJEC guideline, Test A.10)

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.
Other information	
Explosive properties	Not explosive.
Molecular formula	C23 H16 O6 . C17 H20 N4 S . H2 O
Molecular weight	718.83 g/mol
Oxidizing properties	The substance or mixture is not classified as oxidizing.

10. Stability and reactivity

Reactivity	Not water reactive.
Chemical stability	This material should not be handled above the following temperature: 135 C. This temperature is based on a laboratory test (ARC) and assumes near atmospheric pressures and quantities of less than 500 kg (1100 lb) or 208 L (55 gal).
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Excessive heat.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions.

11. Toxicological information

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Product	Species	Test Results
ZypAdhera® for Injection (CAS 221373-18-8)		
Acute		
Dermal		
LD	Rabbit	> 200 mg/kg (Olanzapine)
Inhalation		
LC0	Rat	> 880 mg/m3, 4 h (Olanzapine)
Oral		
LD	Monkey	> 100 mg/kg (Olanzapine)
LD50	Rat	407 mg/kg (calculated)
		177 mg/kg (Olanzapine)

Skin corrosion/irritation	Rabbit: No irritation. (Olanzapine) Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Rabbit: Irritating. (Olanzapine)
Respiratory or skin sensitization	
Respiratory sensitization	Did not cause sensitization on laboratory animals. (Olanzapine) Based on available data, the classification criteria are not met.
Skin sensitization	Did not cause sensitization on laboratory animals. Confirmed cases of allergic contact dermatitis have been reported. Symptoms have included rash with redness, swelling, and scaling of the affected skin areas. Positive reactions have been verified by patch testing with olanzapine (0.1%). Confirmed cases of allergic contact dermatitis have been reported. Symptoms have included rash with redness, swelling, and scaling of the affected skin areas. Positive reactions have been verified by patch testing with olanzapine (0.1%). (Olanzapine)
Germ cell mutagenicity	Result in genetic toxicity assays (in vitro and in vivo): Negative (Olanzapine) Based on available data, the classification criteria are not met.
Carcinogenicity	Not listed by IARC, NTP, ACGIH or OSHA. Based on results of studies in rats and mice, it was concluded that olanzapine is not carcinogenic. Significant findings in oncogenicity studies were limited to an increased incidence of mammary adenocarcinomas in female rats and mice. This is a common finding in rodents treated with agents that increase prolactin secretion and has no direct significance for humans. Based on available data, the classification criteria are not met.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Decreased mating activity due to sedation. Decreased fertility, abnormal reproductive cycles, and reproductive tissue changes can be linked to elevations of prolactin levels. The clinical effects of such elevations are unknown for humans. Embryo and fetal toxicity occurred only at maternally toxic doses. (Olanzapine) Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure Animal studies have reported the following effects: Central nervous system effects. Heart effects. Blood effects. (Olanzapine)

Aspiration hazard No aspiration toxicity classification

Further information Adverse effects associated with therapeutic use of olanzapine include sleepiness, weight gain, mild temporary increase in serum prolactin, dizziness, weakness, restlessness, increased appetite, swelling of hands and feet, decreased blood pressure when standing, dry mouth and constipation. Mild temporary increases in glucose and liver enzyme levels and blood effects have been seen occasionally. Symptoms reported in olanzapine overdose include changes in heart rate and rhythm, slurred speech, reduced level of consciousness ranging from sedation to coma, convulsion, and muscle rigidity.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Information given is based on data obtained from similar substances. (Olanzapine)

Product		Species	Test Results
Olanzapine Pamoate Monohydrate (CAS 221373-18-8)			
	NOEC		100 mg/l, 3 h Sewage microorganisms (highest concentration tested)
Other	NOEC	Pseudokirchnerella subcapitata	1.7 mg/l, 14 d (based on initial concentration)
			0.9 mg/l, 14 d (based on mean measured concentrations)
Acute			
	EC50		> 100 mg/l, 3 h Sewage microorganisms (Respiration inhibition)
		Selenastrum capricornutum (new name Pseudokirchnerella subca	> 14.1 mg/l (average specific growth rate)
	IC50		255 mg/l Isolated growth on agar (Microbial growth inhibition)
Other	EC50	Pseudokirchnerella subcapitata	> 14.1 mg/l, 14 d (average specific growth rate) (biomass)
Aquatic			
Crustacea	NOEC	Daphnia magna	2.4 mg/l, 48 h
			0.027 mg/l, 21 d (chronic growth) (reproduction) (survival)
Fish	NOEC	Fathead minnow (Pimephales promelas)	0.011 mg/l
		Rainbow Trout	0.43 mg/l, 96 h
Acute			
Crustacea	EC50	Daphnia magna	8 mg/l, 48 h
Fish	LC50	Rainbow Trout	1.74 mg/l, 96 h

A LAEG is the maximum allowable concentration at the point of application that is expected to result in no appreciable risk to populations of aquatic and terrestrial organisms, or to human health.

LILLY AQUATIC EXPOSURE GUIDELINES:

Olanzapine Pamoate Monohydrate

Acute LAEG (at the edge of the acute mixing zone):	67 µg/l
Chronic LAEG (at the edge of the chronic mixing zone):	7.4 µg/l
Drinking water LAEG (at the point where surface water is taken for drinking water):	2.5 µg/l

Persistence and degradability

Hydrolysis half-life at 25 C (days): 65, 76, 78 (pH 5, 7, 9)
Ready hydrolysis (% hydrolyzed after 28 days at 25 C): 31.15, 24.87, 61.85 (pH 5, 7, 9)
Biodegradation in sludge (28 days):
DT50: 7.4 days
1.45% CO2 evolution
6.5% olanzapine remained
Degradation in aquatic sediment (100 days):
Aerobic systems:
4.3% CO2 evolution
DT90 from overlying water: 2.6 days
Anaerobic systems:
0.3% CO2 evolution
DT90 from overlying water: 14.6 to 17.2 days

Bioaccumulative potential

Log Kow: </= 2.1

Partition coefficient n-octanol / water (log Kow)

0.3, (pH 5)
1.7, (pH 7)
2.1, (pH 9)

Mobility in soil

No data available.

Other adverse effects

Not available.

13. Disposal considerations

Disposal instructions

Dispose of contents/container in accordance with local/regional/national/international regulations.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

UN number	UN3077
UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (Olanzapine Pamoate Monohydrate)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
ERG Code	9L
Special precautions for user	Not available.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

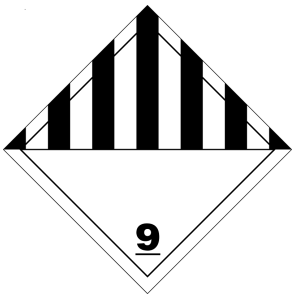
IMDG

UN number	UN3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Olanzapine Pamoate Monohydrate)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
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

Not available.

IATA; IMDG



Marine pollutant

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (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 1910.1001-1052)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Classified hazard categories
Combustible dust
Acute toxicity (any route of exposure)
Serious eye damage or eye irritation
Respiratory or skin sensitization
Specific target organ toxicity (single or repeated exposure)

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.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	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 02-16-2015

Revision date	03-15-2019
Version #	04
List of abbreviations	LEG: Lilly Exposure Guideline. STEG: Short Term Exposure Guideline. TWA: Time Weighted Average
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