

SAFETY DATA SHEETS

This SDS packet was issued with item:

078905411

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

078036207

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

078905410



Material Safety Data Sheet

Flunixinamine

WW MSDS No. 305601

Section 1. Product and Company Identification

Manufactured/ Supplied by	Fort Dodge Animal Health 800 5th Street NW P.O. Box 518 Fort Dodge, IA 50501 Phone: 515-955-4600 Fax: 515-955-9149	Date of Preparation	11 August 2004
		Product No.	305601
Product Trade Name	Flunixinamine	Formula No.	Not available.
Common Name	Not applicable.	CAS No.	Mixture.
Synonyms	Flunixin meglumine.	U.N. No.	Not applicable.
Chemical Formula	Mixture.	EINECS No.	Not applicable.
Chemical Family	Anti-inflammatory Agents.	In Case of Emergency	515-955-6033
Material Uses	Pharmaceutical: Veterinary pharmaceutical.		
Packaging	Glass bottle/vial		
Formula Type	Injectable solution.		

Section 2. Composition - Information on Ingredients

Name of Ingredients	CAS No.	Conc.	EU Symbol	R Phrase
1) Flunixin Meglumine	6284-40-8	5	Xn	R42/43
2) Phenol	108-95-2	0.5	C	R34, R24/25
3) Sodium Formaldehyde Sulfoxylate	149-44-0	0.25	Xn	R37
4) Inert Ingredients		>90%	Xi Not controlled.	Not controlled.

Section 3. Hazards Identification - Summary of Primary Effects and Critical Hazards

Acute Health Effects	Severely irritating to eyes.
Chronic Health Effects	MUTAGENIC EFFECTS: Mutagenic for mammals [Propylene Glycol]. Mutagenic for mammals Potential organ systems effected are: Central Nervous System (CNS), Gastrointestinal Tract.
Environmental Hazards	No known significant effects or critical hazards.

Section 4. First Aid Measures - (by medical responders using "Universal Precautions")

Eye Contact	Flush eyes with plenty of water for 15 minutes, occasionally lifting upper and lower eyelids. (Check person for contact lenses and remove if present.) If redness or irritation persists have eyes examined by doctor immediately.
Skin Contact	Flush skin with plenty of soap and water for at least 15 minutes (remove all contaminated clothing and shoes). Get medical attention if symptoms persist.
Inhalation	No specific treatment, treat symptomatically. If breathing is difficult give oxygen, if respiratory arrest occurs provide artificial respiration and seek immediate medical assistance.
Ingestion	No specific treatment, treat symptomatically. Call medical doctor or poison control center immediately if large quantities are ingested.
Notes to Medical Doctor	Direct treatment at control of symptoms.

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Section 5. Fire-Fighting Measures

Extinguishing Media and Instructions	Follow your company's procedures. Use an extinguishing agent suitable for the surrounding class of fire.
Special Exposure Hazards	None. Dispose of fire debris and contaminated fire fighting water in accordance with regulations. Collect contaminated fire fighting water and prevent entry into drains and waterways.
Special Fire Fighting Protective Equipment	Qualified persons wearing full fire-fighting suits and approved/certified self-contained breathing apparatus.

Section 6. Accidental Release Measures

Small Spill Guidelines	Follow your company's spill procedures. Keep people away from spill. Put on appropriate personal protective equipment (see Section 8). Use a tool to scoop up solid or absorbed material and put into appropriate labeled waste container.
Large Spill Guidelines	Initiate company's spill response procedures immediately. Keep people out of area. Put on appropriate personal protective equipment (see Section 8). Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Environmental Precautions	Dike spill area and do not allow product to reach sewage system and surface or ground water. Provide notification of any reportable spill to authorities. (See Section 12 for environmental risks and 13 for disposal informations.) Clean spill area and tools used several times with inert absorbents and put in container for appropriate disposal.

Section 7. Handling and Storage

Handling (ventilation and fire prevention)	Avoid contact with eyes. Wash thoroughly after handling.
Storage (conditions and limitations)	Keep container tightly closed. Keep in a well-ventilated place. Store between 15 to 30°C (59 to 86°F)

Section 8. Exposure Controls and Personal Protection - (normal and intended use)

Exposure Guidelines					
Component		REG. Limit	OSHA (PEL)	ACGIH (TLV®)	Company Guideline
1) Phenol	TWA:	19 mg/m³	19 mg/m³	19 mg/m³	
		SKIN	SKIN	SKIN	
2) Propylene Glycol	TWA:	156 mg/m³			
Engineering Design and Control Measures	General ventilation is typically sufficient to keep airborne levels below established values. Provide eye wash and quick drench shower close to work station. Clean, appropriately launder, or dispose of all potentially contaminated work clothing, foot wear, and protective equipment after use.				
Protective Clothing					
Eyes	Safety glasses. Goggles, face shield, or other full-face protection where if the potential exists for direct exposure to aerosols or splashes.				
Skin	Lab coat.				
Hands	Gloves, Chemical resistant. Gloves, Nitrile.				
Respiratory	Respirator selection must be based on anticipated exposure levels, product hazards, and the safe working limits of the selected respirator. A respirator is not needed under normal and intended conditions of product use.				

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Section 9. Physical and Chemical Properties

Physical State and Appearance	Liquid.	Odor	Slight.
Molecular Weight	Mixture.	Color	Clear
Boiling Point	Not available.	pH	8.3 [Basic.]
Melting/Freezing Point	0°C (32°F) based on data for: Water For Injection.		
Density/Bulk Density	Weighted average: 1.01 (Water = 1)		
Vapor Pressure	18 mm of Hg (@ 20°C) (Water For Injection.).		
Vapor Density	2.62 (Air = 1) (Propylene Glycol).		
Viscosity	Not available.		
Partition Coefficient	The product is more soluble in oil.		
Solubility	Flunixin Injection: Partially soluble in cold water, hot water.		
Flash Point	Not applicable.		
Autoignition Point	Not applicable.		
Explosion Limits	Not applicable.		
Dust Explosivity	Not applicable.		

Section 10. Stability and Reactivity

Conditions to Avoid and Incompatibility	Highly reactive with oxidizing agents. Reactive with acids, alkalis.
Decomposition Products	These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...), sulfur oxides (SO ₂ , SO ₃ ...).

Section 11. Toxicological Information**Acute Effects**

Component	Test	Result	Route	Species
1) Phenol	LD50	317 mg/kg	oral	Rat
	LD50	270 mg/kg	oral	Mouse
	LD50	630 mg/kg	dermal	Rabbit
	LD50	669 mg/kg	dermal	Rat
2) Propylene Glycol	LD50	20000 mg/kg	oral	Rat
	LD50	22000 mg/kg	oral	Mouse
	LD50	20800 mg/kg	dermal	Rabbit
3) Sodium Formaldehyde Sulfoxylate	LD50	>2000 mg/kg	oral	Rat
	LD50	4000 mg/kg	oral	Mouse
4) Water For Injection.	LD50	90000 mg/kg	oral	Rat

Eye Contact Severely irritating (USA). Irritating (EU).

Skin Contact Moderately irritating (USA). Irritating (EU).

Inhalation Slightly irritating to the respiratory system.

Ingestion Practically non-toxic if swallowed.

Chronic Effects

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Target Organs	Potential organ systems effected are: Central Nervous System (CNS), Gastrointestinal Tract.
Adverse Effects Statements	Adverse affects could include uncoordination, motor and sensory paralysis discomfort (gastrointestinal)
Sensitization	Not available.
Carcinogenic Effects	Classified (ACGIH-A4-Not Classifiable as a Human Carcinogen), 3 (Not classifiable for human.) by IARC [Phenol].
Mutagenic Effects	Mutagenic for mammals [Propylene Glycol].
Teratogenic Effects	No known human teratogenic effect
Reproductive Effects	No evidence of human reproductive effects.
Other Effects	FDA C - Risk cannot be ruled out.

Section 12. Ecological Information

Environmental Fate	Not available.		
Environmental Hazards	No known significant effects or critical hazards.		
Ecotoxicity			
Component	Species	Period	Result
1) Phenol	Trout	48 hours	9.4 mg/l
	EC50 (daphnia)	48 hours	10 mg/l
Other	Not available.		

Section 13. Disposal Considerations

Waste Handling and Disposal	Medical waste Avoid disposal, make attempts to use product completely in accordance with intended use. Incinerate unwanted products and waste materials.
<i>Note: The waste generator must be informed of and follow all applicable rules and regulations for the handling and disposal of waste.</i>	

Section 14. Transport Information

Proper Shipping Name, Primary Class, UNNA Number, Packaging Group	Not controlled	
ADR/RID Classification (Road and Rail Transport)	Not controlled.	
ADNR Classification (Inland Waterways)	Not controlled.	
IMO/MDG Class (Maritime Transport)	Not controlled.	
ICAO/IATA (Air Transport)	Not controlled.	
CEPIC Tremcard	Not available.	HI Kemler Not available.

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U.S.A. DOT Class

Not controlled.

NFPA

Health



Flammability

Reactivity

Specific hazard

RQ

Not applicable.

Packaging Instructions

Not available.

Section 15. Regulatory Information and Warning Labels**(R) Risk Phrases**R22- Harmful if ingested.
R36/38- Irritating to eyes and skin.

[Xi] Irritant.

(S) Safety Phrases

S41- In case of fire and/or explosion do not breathe fumes.

*NOTE: This product has been classified in accordance with applicable country-specific regulations.***Section 16. Other Key Information****Other Considerations**

See product label and package insert for additional information.

11 August 2004

Responsible for MSDS: FDAH Environmental, Health, and Safety Department

Fort Dodge Animal Health -- A Division of Wyeth Corporation

Notice to Reader** This symbol indicates information which has changed from the previous MSDS.**The information provided in this MSDS is based on current knowledge, however, this does not constitute a warranty by the Company for that information. The product user is responsible for the appropriate and intended handling, use, and disposal of this product in accordance with label or package precautions and this information. All materials may present unknown hazards and should be used with caution.*

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

Product Identifier

Material Name: Flunixinamine (flunixin meglumine) Injectable Solution (U.S. only)

Trade Name: FLUNIXAMINE
Synonyms: MEFLOSYL
Chemical Family: Mixture

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Intended Use: Veterinary product used as Non-steroidal, anti-inflammatory drug (NSAID)
Restrictions on Use: Not for human use

Details of the Supplier of the Safety Data Sheet

Zoetis Inc.
100 Campus Drive, P.O. Box 651
Florham Park, New Jersey 07932 (USA)
Rocky Mountain Poison and Drug Center Phone: 1-866-531-8896
Product Support/Technical Services Phone: 1-800-366-5288

Zoetis Belgium S.A.
Mercuriusstraat 20
1930 Zaventem
Belgium

Emergency telephone number:
CHEMTREC (24 hours): 1-800-424-9300
Contact E-Mail: VMIPSrecords@zoetis.com

Emergency telephone number:
International CHEMTREC (24 hours): +1-703-527-3887

2. HAZARDS IDENTIFICATION

Appearance: Clear liquid

Classification of the Substance or Mixture

GHS - Classification

Acute Oral Toxicity: Category 4
Acute Toxicity - Dusts and Mists: Category 5
Skin Corrosion/Irritation: Category 2
Serious Eye Damage/Eye Irritation: Category 1
Carcinogenicity: Category 2
Specific target organ systemic toxicity (repeated exposure): Category 2
Acute aquatic toxicity: Category 3
Chronic aquatic toxicity: Category 3

EU Classification:

EU Indication of danger: Toxic
Dangerous for the Environment

EU Symbol: T N
EU Risk Phrases:

R23 - Toxic by inhalation.
R22 - Harmful if swallowed.
R36 - Irritating to eyes.
R38 - Irritating to skin.

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2. HAZARDS IDENTIFICATION

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Label Elements

Signal Word: Danger
Hazard Statements: H318 - Causes serious eye damage
H315 - Causes skin irritation
H302 - Harmful if swallowed
H333 - May be harmful if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure (gastrointestinal system, kidneys)
H351 - Suspected of causing cancer
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements: P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P271 - Use only outdoors or in a well-ventilated area
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P270 - Do not eat, drink or smoke when using this product
P264 - Wash hands thoroughly after handling
P273 - Avoid release to the environment
P308 + P313 - IF exposed or concerned: Get medical attention/advice
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTRE or doctor/physician
P301 + P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell
P330 - Rinse mouth
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTRE/doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403 - Store in a well-ventilated place
P405 - Store locked up
P501 - Dispose of contents/container in accordance with all local and national regulations



Other Hazards

Short Term: In the event of accidental injection, an allergic reaction may occur.
Long Term: May cause damage to organs through prolonged or repeat exposure.
Known Clinical Effects: Drugs of this class may cause gastrointestinal effects such as nausea, pain, heartburn, bleeding, ulceration, and perforation. Other nonsteroidal anti-inflammatory drugs (NSAIDs) are known to impact delivery, late fetal development, and lactation.

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Australian Hazard Classification (NOHSC):

Hazardous Substance. Non-Dangerous Goods.

Note: This document has been prepared in accordance with standards for workplace safety, which requires the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warning included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

Ingredient	CAS Number	EU EINECS/ELINCS List	EU Classification	GHS Classification	%
Propylene glycol	57-55-6	200-338-0	Not Listed	Not Listed	20
Flunixin meglumine	42461-84-7	255-836-0	T+;R26 T;R25 Xi;R41 Xn;R48/22 ;R51/53	Acute Tox. 1 (H330) Acute Tox. 2 (H300) Eye Dam. 1 (H318) STOT RE 2 (H373) Aquatic Tox. 2 (H401 and H411)	5
PHENOL	108-95-2	203-632-7	T; R23/24/25 C; R34 Xn; R48/20/21/22 Muta. Cat. 3; R68	Acute Tox. 3 (H301) STOT RE 2 (H373) Muta. 2 (341) Skin Corr. 1B (H314) Acute Tox. 3 (H331)	<1
2,2 IMINODIETHANOL	111-42-2	203-868-0	Xn; R22-48/22 Xi; R38-41	Acute Tox. 4 (H302) STOT RE 2 (H373) Skin Irrit. 2 (H315) Eye Dam. 1 (H318)	<1
HYDROCHLORIC ACID	7647-01-0	231-595-7	T; R23 C; R35	Skin Corr.1B (H314) STOT SE 3 (H335)	**

Ingredient	CAS Number	EU EINECS/ELINCS List	EU Classification	GHS Classification	%
Sodium formaldehyde sulfoxylate dihydrate	6035-47-8	Not Listed	Not Listed	Not Listed	*
Disodium EDTA (dihydrate)	6381-92-6	Not Listed	Not Listed	Not Listed	*
Water for Injection	7732-18-5	231-791-2	Not Listed	Not Listed	*

Additional Information:

* Proprietary

** to adjust pH

Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety. In accordance with 29 CFR 1910.1200, the exact percentage composition of this mixture has been withheld as a trade secret.

For the full text of the R phrases and CLP/GHS abbreviations mentioned in this Section, see Section 16

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4. FIRST AID MEASURES

Description of First Aid Measures

- Eye Contact:** Flush with water while holding eyelids open for at least 15 minutes. Seek medical attention immediately.
- Skin Contact:** Remove contaminated clothing. Flush area with large amounts of water. Use soap. Seek medical attention.
- Ingestion:** Never give anything by mouth to an unconscious person. Wash out mouth with water. Do not induce vomiting unless directed by medical personnel. Seek medical attention immediately.
- Inhalation:** Remove to fresh air and keep patient at rest. Seek medical attention immediately.

Most Important Symptoms and Effects, Both Acute and Delayed

- Symptoms and Effects of Exposure:** For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.
- Medical Conditions Aggravated by Exposure:** None known

Indication of the Immediate Medical Attention and Special Treatment Needed

- Notes to Physician:** None

5. FIRE-FIGHTING MEASURES

- Extinguishing Media:** Extinguish fires with CO2, extinguishing powder, foam, or water.

Special Hazards Arising from the Substance or Mixture

- Hazardous Combustion Products:** Formation of toxic gases is possible during heating or fire.
- Fire / Explosion Hazards:** Fine particles (such as dust and mists) may fuel fires/explosions.

Advice for Fire-Fighters

- During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

- Ensure adequate ventilation. Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

Environmental Precautions

- Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

Methods and Material for Containment and Cleaning Up

- Measures for Cleaning / Collecting:** Contain the source of spill if it is safe to do so. Collect spill with absorbent material. Clean spill area thoroughly.
- Additional Consideration for Large Spills:** Non-essential personnel should be evacuated from affected area. Report emergency situations immediately. Clean up operations should only be undertaken by trained personnel.

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7. HANDLING AND STORAGE

Precautions for Safe Handling

When handling, use appropriate personal protective equipment (see Section 8). Keep away from heat, sparks, and flame. Use with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Avoid accidental injection. Wash thoroughly after handling. Releases to the environment should be avoided. Review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure or environmental releases. Potential points of process emissions of this material to the atmosphere should be controlled with dust collectors, HEPA filtration systems or other equivalent controls.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions: Store as directed by product packaging. Keep containers tightly closed in a cool, well-ventilated place

Storage Temperature: 15-30°C (59-86°F)

Incompatible Materials: Acids, bases, and oxidizers

Specific end use(s): No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Refer to available public information for specific member state Occupational Exposure Limits.

Propylene glycol

Australia TWA	150 ppm 474 mg/m ³ 10 mg/m ³
Ireland OEL - TWAs	150 ppm 470 mg/m ³ 10 mg/m ³
Latvia OEL - TWA	7 mg/m ³
Lithuania OEL - TWA	7 mg/m ³

PHENOL

ACGIH Threshold Limit Value (TWA)	5 ppm
ACGIH - Biological Exposure Limit:	250 mg/g creatinine
Australia TWA	1 ppm 4 mg/m ³
Austria OEL - MAKs	2 ppm 8 mg/m ³
Belgium OEL - TWA	2 ppm 8 mg/m ³
Bulgaria OEL - TWA	8 mg/m ³ 2 ppm
Bulgaria - Biological Exposure Limit:	200 mg/L
Cyprus OEL - TWA	8 mg/m ³ 2 ppm
Czech Republic OEL - TWA	7.5 mg/m ³
Denmark OEL - TWA	1 ppm 4 mg/m ³

2,2 IMINODIETHANOL

ACGIH Threshold Limit Value (TWA)	1 mg/m ³
ACGIH - Skin Absorption Designation	Skin - potential significant contribution to overall exposure by the cutaneous route

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Australia TWA	3 ppm 13 mg/m ³
Austria OEL - MAKs	0.46 ppm 2 mg/m ³
Belgium OEL - TWA	0.46 ppm 2 mg/m ³
Bulgaria OEL - TWA	10 mg/m ³
Czech Republic OEL - TWA	5 mg/m ³
Denmark OEL - TWA	0.46 ppm 2 mg/m ³
Estonia OEL - TWA	3 ppm 5 mg/m ³
Finland OEL - TWA	0.46 ppm 2 mg/m ³
France OEL - TWA	3 ppm 15 mg/m ³
Germany (DFG) - MAK	1 mg/m ³
Greece OEL - TWA	3 ppm 15 mg/m ³
Ireland OEL - TWAs	1 mg/m ³
Lithuania OEL - TWA	3 ppm 15 mg/m ³
Poland OEL - TWA	9 mg/m ³
Portugal OEL - TWA	2 mg/m ³
Slovenia OEL - TWA	15 mg/m ³
Spain OEL - TWA	0.46 ppm 2 mg/m ³
Sweden OEL - TWAs	3 ppm 15 mg/m ³
Switzerland OEL -TWAs	1 mg/m ³

HYDROCHLORIC ACID

ACGIH Ceiling Threshold Limit:	2 ppm
Australia PEAK	5 ppm 7.5 mg/m ³
Austria OEL - MAKs	5 ppm 8 mg/m ³
Belgium OEL - TWA	5 ppm 8 mg/m ³
Bulgaria OEL - TWA	5 ppm 8.0 mg/m ³
Cyprus OEL - TWA	5 ppm 8 mg/m ³
Czech Republic OEL - TWA	8 mg/m ³
Estonia OEL - TWA	5 ppm 8 mg/m ³
Germany - TRGS 900 - TWAs	2 ppm 3 mg/m ³
Germany (DFG) - MAK	2 ppm 3.0 mg/m ³
Greece OEL - TWA	5 ppm 7 mg/m ³

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Hungary OEL - TWA	8 mg/m ³
Ireland OEL - TWAs	5 ppm 8 mg/m ³
Italy OEL - TWA	5 ppm 8 mg/m ³
Japan - OELs - Ceilings	5 ppm 7.5 mg/m ³
Latvia OEL - TWA	5 ppm 8 mg/m ³
Lithuania OEL - TWA	5 ppm 8 mg/m ³
Luxembourg OEL - TWA	5 ppm 8 mg/m ³
Malta OEL - TWA	5 ppm 8 mg/m ³
Netherlands OEL - TWA	8 mg/m ³
Vietnam OEL - TWAs	5 mg/m ³
Poland OEL - TWA	5 mg/m ³
Portugal OEL - TWA	5 ppm 8 mg/m ³
Romania OEL - TWA	5 ppm 8 mg/m ³
Slovakia OEL - TWA	5 ppm 8.0 mg/m ³
Slovenia OEL - TWA	5 ppm 8 mg/m ³
Spain OEL - TWA	5 ppm 7.6 mg/m ³
Switzerland OEL -TWAs	2 ppm 3.0 mg/m ³

The purpose of the Occupational Exposure Band (OEB) classification system is to separate substances into different Hazard categories when the available data are sufficient to do so, but inadequate to establish an Occupational Exposure Limit (OEL). The OEB given is based upon an analysis of all currently available data; as such, this value may be subject to revision when new information becomes available.

Flunixin meglumine

Zoetis OEB

OEB 2 (control exposure to the range of 100ug/m³ to < 1000ug/m³)

Exposure Controls

Engineering Controls:

Engineering controls should be used as the primary means to control exposures. Keep air contamination levels below the exposure limits or within the OEB range listed above in this section. General room ventilation is adequate unless the process generates dust, mist or fumes.

Personal Protective Equipment:

Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

Hands:

Impervious gloves are recommended if skin contact with drug product is possible and for bulk processing operations.

Eyes:

Wear safety glasses or goggles if eye contact is possible.

Skin:

Impervious protective clothing is recommended if skin contact with drug product is possible and for bulk processing operations.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection: If airborne exposures are within or exceed the Occupational Exposure Band (OEB) range, wear an appropriate respirator with a protection factor sufficient to control exposures to the bottom of the OEB range. If the applicable Occupational Exposure Limit (OEL) is exceeded, wear an appropriate respirator with a protection factor sufficient to control exposures to below the OEL.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	Color:	Clear, colorless
Odor:	Slight	Odor Threshold:	No data available.
Molecular Formula:	Mixture	Molecular Weight:	Mixture

Solvent Solubility:	No data available
Water Solubility:	Soluble
pH:	8.3
Melting/Freezing Point (°C):	0°C (32°F) based on water
Boiling Point (°C):	100°C (212°F) based on water
Partition Coefficient: (Method, pH, Endpoint, Value)	No data available
Decomposition Temperature (°C):	No data available.

Evaporation Rate (Gram/s):	No data available
Vapor Pressure (kPa):	18 mm of Hg (@ 20°C) based on water
Vapor Density (g/ml):	>1
Relative Density:	No data available
Specific Gravity:	1.01
Viscosity:	No data available

Flammability:

Autoignition Temperature (Solid) (°C):	No data available
Flammability (Solids):	No data available
Flash Point (Liquid) (°C):	No data available
Upper Explosive Limits (Liquid) (% by Vol.):	No data available
Lower Explosive Limits (Liquid) (% by Vol.):	No data available

10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical Stability:	Stable under normal conditions of use.
Possibility of Hazardous Reactions	
Oxidizing Properties:	No data available
Conditions to Avoid:	Fine particles (such as dust and mists) may fuel fires/explosions.
Incompatible Materials:	Acids, bases, and oxidizers
Hazardous Decomposition Products:	Thermal decomposition products may include oxides of carbon, nitrogen, and sulfur.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

General Information: Toxicological properties of the formulation have not been investigated. The information in this section describes the potential hazards of the individual ingredients and the formulation.
Routes of exposure: eye contact , skin contact

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11. TOXICOLOGICAL INFORMATION

Acute Toxicity: (Species, Route, End Point, Dose)

HYDROCHLORIC ACID

Rat Oral LD 50 238-277 mg/kg

Flunixin meglumine

Rat Inhalation LC50 < 0.52 mg/L

Rat Oral LD50 53-157mg/kg

Propylene glycol

Rat Oral LD 50 22,000 mg/kg

Mouse Oral LD 50 24,900mg/kg

Rabbit Dermal LD 50 20,800mg/kg

PHENOL

Rat Oral LD50 317 mg/kg

Rat Dermal LD50 525mg/kg

Rabbit Dermal LD50 630mg/kg

Mouse Oral LD50 270mg/kg

2,2 IMINODIETHANOL

Rat Oral LD50 710 mg/kg

Rabbit Dermal LD50 11.9ml/kg

Inhalation Acute Toxicity

May be harmful if inhaled. May cause respiratory tract and mucous membrane irritation.

Ingestion Acute Toxicity

Harmful if swallowed.

Irritation / Sensitization: (Study Type, Species, Severity)

Flunixin meglumine

Skin Irritation Rabbit Mild

Eye Irritation Rabbit Severe

Skin Sensitization - GPMT Negative

Propylene glycol

Skin Irritation Rabbit Mild

Eye Irritation Rabbit Mild

2,2 IMINODIETHANOL

Eye Irritation Rabbit Severe

Skin Irritation Rabbit Moderate

Irritation / Sensitization Comments: May cause irreversible eye damage.

Skin Irritation / Sensitization May cause skin irritation.

Repeated Dose Toxicity: (Duration, Species, Route, Dose, End Point, Target Organ)

Flunixin meglumine

1 Year(s) Rat Oral 1 mg/kg/day NOEL Gastrointestinal System, Kidney

SAFETY DATA SHEET

Material Name: Flunixin meglumine (flunixin meglumine) Injectable
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11. TOXICOLOGICAL INFORMATION

Reproduction & Developmental Toxicity: (Study Type, Species, Route, Dose, End Point, Effect(s))

Flunixin meglumine

Fertility and Embryonic Development Rat Oral 2-12 mg/kg NOEL Not teratogenic
Reproductive & Fertility Rat Oral 3-9 mg/kg NOEL Maternal Toxicity

PHENOL

2 Generation Reproductive Toxicity Rat Oral 1000 ppm NOAEL No effects at maximum dose
Embryo / Fetal Development Rat Oral 120 mg/kg LOAEL Fetotoxicity, Not Teratogenic
Fertility and Embryonic Development Rat Oral 53 mg/kg LOAEL Maternal Toxicity, Fetotoxicity, Not Teratogenic
Embryo / Fetal Development Rat Intraperitoneal 200 mg/kg NOAEL No effects at maximum dose

Genetic Toxicity: (Study Type, Cell Type/Organism, Result)

Flunixin meglumine

Bacterial Mutagenicity (Ames) Bacteria Negative
Micronucleus Mouse Negative
Chromosome Aberration Chinese Hamster Ovary (CHO) cells Positive
Mammalian Cell Mutagenicity Mouse Lymphoma Positive

Carcinogenicity: (Duration, Species, Route, Dose, End Point, Effect(s))

Flunixin meglumine

104 Week(s) Rat Oral, in feed 8 mg/kg/day NOEL Not carcinogenic
97 Week(s) Mouse Oral, in feed 6 mg/kg/day NOEL Not carcinogenic

PHENOL

103 Week(s) Rat Oral 5,000 ppm NOAEL Not carcinogenic
103 Week(s) Mouse Oral 5,000 ppm NOAEL Not carcinogenic

Carcinogen Status: See below

HYDROCHLORIC ACID

IARC: Group 3 (Not Classifiable)

2,2 IMINODIETHANOL

IARC: Group 2B (Possibly Carcinogenic to Humans)

Product Level Toxicity Data

Acute Toxicity Estimate (ATE), oral 1000 mg/kg
Acute Toxicity Estimate (ATE), inhalation (dust/mist) 10 mg/l
Acute Toxicity Estimate (ATE), dermal >5000 mg/kg

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12. ECOLOGICAL INFORMATION

Environmental Overview: Environmental properties of the formulation have not been investigated. The following information is available for the individual ingredients. may be harmful to aquatic organisms. Releases to the environment should be avoided.

Toxicity:

Aquatic Toxicity: (Species, Method, End Point, Duration, Result)

Flunixin meglumine

Lepomis macrochirus (Bluegill Sunfish) LC50 96 Hours 46 mg/L
Salmo gairdneri (Trout) LC50 96 Hours 9.2 mg/L
Daphnia Magna (Water Flea) EC50 48 Hours 25 mg/L
Algae IC50 72 Hours 36-120 mg/L

PHENOL

Selenastrum capricornutum (Green Alga) EC50 96 Hours 150 mg/L
Pimephales promelas (Fathead Minnow) LC50 96 Hours 24 mg/L
Oncorhynchus mykiss (Rainbow Trout) LC50 96 Hours 8.9 mg/L
Lepomis macrochirus (Bluegill Sunfish) LC50 96 Hours 23.88 mg/L
Daphnia magna (Water Flea) LC50 48 Hours 13 mg/L

Persistence and Degradability: No data available

Bio-accumulative Potential: No data available

Mobility in Soil: No data available

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

14. TRANSPORT INFORMATION

The following refers to all modes of transportation unless specified below.

Not regulated for transport under USDOT, EUADR, IATA, or IMDG regulations.

U.S. DOT Reportable Quantity (RQ), 49 CFR 172.101 Appendix A:

2,2 IMINODIETHANOL

PZ01728

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CERCLA/SARA Hazardous Substances
and their Reportable Quantities: 100 lb
45.4 kg

HYDROCHLORIC ACID
CERCLA/SARA Hazardous Substances
and their Reportable Quantities: 5000 lb
2270 kg

15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

Canada - WHMIS: Classifications

WHMIS hazard class:

Class D, Division 2, Subdivision A

Class D, Division 2, Subdivision B

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.



Propylene glycol

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Inventory - United States TSCA - Sect. 8(b)	Present
Australia (AICS):	Present
EU EINECS/ELINCS List	200-338-0

Flunixin meglumine

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Australia (AICS):	Present
Standard for the Uniform Scheduling for Drugs and Poisons:	Schedule 4
EU EINECS/ELINCS List	255-836-0

PHENOL

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
EU EINECS/ELINCS List	203-632-7

2,2 IMINODIETHANOL

CERCLA/SARA 313 Emission reporting	1.0 %
CERCLA/SARA Hazardous Substances and their Reportable Quantities:	100 lb 45.4 kg
California Proposition 65	carcinogen initial date 6/22/12
Inventory - United States TSCA - Sect. 8(b)	Present

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15. REGULATORY INFORMATION

Australia (AICS):	Present
Standard for the Uniform Scheduling	Schedule 5
for Drugs and Poisons:	Schedule 6
EU EINECS/ELINCS List	203-868-0

HYDROCHLORIC ACID

CERCLA/SARA 313 Emission reporting	1.0 %
CERCLA/SARA Hazardous Substances	5000 lb
and their Reportable Quantities:	2270 kg
CERCLA/SARA - Section 302 Extremely Hazardous	500 lb
TPQs	
CERCLA/SARA - Section 302 Extremely Hazardous	5000 lb
Substances EPCRA RQs	
California Proposition 65	Not Listed
Inventory - United States TSCA - Sect. 8(b)	Present
Australia (AICS):	Present
Standard for the Uniform Scheduling	Schedule 5
for Drugs and Poisons:	Schedule 6
EU EINECS/ELINCS List	231-595-7

Sodium formaldehyde sulfoxylate dihydrate

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
EU EINECS/ELINCS List	Not Listed

Disodium EDTA (dihydrate)

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Australia (AICS):	Present
EU EINECS/ELINCS List	Not Listed

Water for Injection

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Inventory - United States TSCA - Sect. 8(b)	Present
Australia (AICS):	Present
REACH - Annex IV - Exemptions from the	Present
obligations of Register:	
EU EINECS/ELINCS List	231-791-2

16. OTHER INFORMATION

Text of R phrases and GHS Classification abbreviations mentioned in Section 3

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H302 - Harmful if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure
H315 - Causes skin irritation
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H300 - Fatal if swallowed
H401 - Toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation
H301 - Toxic if swallowed
H341 - Suspected of causing genetic defects
H331 - Toxic if inhaled

R22 - Harmful if swallowed.
R26 - Very toxic by inhalation.
R34 - Causes burns.
R35 - Causes severe burns.
R38 - Irritating to skin.
R41 - Risk of serious damage to eyes.
R68 - Possible risks of irreversible effects.
R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed.
R48/20/21/22 - Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Data Sources: The data contained in this SDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.

Reasons for Revision: Updated Section 2 - Hazard Identification. Updated Section 11 - Toxicology Information.
Updated Section 15 - Regulatory Information. Updated Section 10 - Stability and Reactivity.
Updated Section 9 - Physical and Chemical Properties.

Prepared by: Toxicology and Hazard Communication
Zoetis Global Risk Management

Zoetis Inc. believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time.

End of Safety Data Sheet

SAFETY DATA SHEET



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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

Product Identifier

Material Name: Flunixinamine (flunixin meglumine) Injectable Solution (U.S. only)

Trade Name: FLUNIXAMINE
Synonyms: MEFLOSYL
Chemical Family: Mixture

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Intended Use: Veterinary product used as Non-steroidal, anti-inflammatory drug (NSAID)
Restrictions on Use: Not for human use

Details of the Supplier of the Safety Data Sheet

Zoetis Inc.
100 Campus Drive, P.O. Box 651
Florham Park, New Jersey 07932 (USA)
Rocky Mountain Poison and Drug Center Phone: 1-866-531-8896
Product Support/Technical Services Phone: 1-800-366-5288

Zoetis Belgium S.A.
Mercuriusstraat 20
1930 Zaventem
Belgium

Emergency telephone number:
CHEMTREC (24 hours): 1-800-424-9300
Contact E-Mail: VMIPSrecords@zoetis.com

Emergency telephone number:
International CHEMTREC (24 hours): +1-703-527-3887

2. HAZARDS IDENTIFICATION

Appearance: Clear liquid

Classification of the Substance or Mixture

GHS - Classification

Acute Oral Toxicity: Category 4
Acute Toxicity - Dusts and Mists: Category 5
Skin Corrosion/Irritation: Category 2
Serious Eye Damage/Eye Irritation: Category 1
Carcinogenicity: Category 2
Specific target organ systemic toxicity (repeated exposure): Category 2
Acute aquatic toxicity: Category 3
Chronic aquatic toxicity: Category 3

EU Classification:

EU Indication of danger: Toxic
Dangerous for the Environment

EU Symbol: T N
EU Risk Phrases:

R23 - Toxic by inhalation.
R22 - Harmful if swallowed.
R36 - Irritating to eyes.
R38 - Irritating to skin.

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2. HAZARDS IDENTIFICATION

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Label Elements

Signal Word: Danger
Hazard Statements: H318 - Causes serious eye damage
H315 - Causes skin irritation
H302 - Harmful if swallowed
H333 - May be harmful if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure (gastrointestinal system, kidneys)
H351 - Suspected of causing cancer
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements: P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P271 - Use only outdoors or in a well-ventilated area
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P270 - Do not eat, drink or smoke when using this product
P264 - Wash hands thoroughly after handling
P273 - Avoid release to the environment
P308 + P313 - IF exposed or concerned: Get medical attention/advice
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTRE or doctor/physician
P301 + P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell
P330 - Rinse mouth
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTRE/doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403 - Store in a well-ventilated place
P405 - Store locked up
P501 - Dispose of contents/container in accordance with all local and national regulations



Other Hazards

Short Term: In the event of accidental injection, an allergic reaction may occur.
Long Term: May cause damage to organs through prolonged or repeat exposure.
Known Clinical Effects: Drugs of this class may cause gastrointestinal effects such as nausea, pain, heartburn, bleeding, ulceration, and perforation. Other nonsteroidal anti-inflammatory drugs (NSAIDs) are known to impact delivery, late fetal development, and lactation.

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Australian Hazard Classification (NOHSC):

Hazardous Substance. Non-Dangerous Goods.

Note: This document has been prepared in accordance with standards for workplace safety, which requires the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warning included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

Ingredient	CAS Number	EU EINECS/ELINCS List	EU Classification	GHS Classification	%
Propylene glycol	57-55-6	200-338-0	Not Listed	Not Listed	20
Flunixin meglumine	42461-84-7	255-836-0	T+;R26 T;R25 Xi;R41 Xn;R48/22 ;R51/53	Acute Tox. 1 (H330) Acute Tox. 2 (H300) Eye Dam. 1 (H318) STOT RE 2 (H373) Aquatic Tox. 2 (H401 and H411)	5
PHENOL	108-95-2	203-632-7	T; R23/24/25 C; R34 Xn; R48/20/21/22 Muta. Cat. 3; R68	Acute Tox. 3 (H301) STOT RE 2 (H373) Muta. 2 (341) Skin Corr. 1B (H314) Acute Tox. 3 (H331)	<1
2,2 IMINODIETHANOL	111-42-2	203-868-0	Xn; R22-48/22 Xi; R38-41	Acute Tox. 4 (H302) STOT RE 2 (H373) Skin Irrit. 2 (H315) Eye Dam. 1 (H318)	<1
HYDROCHLORIC ACID	7647-01-0	231-595-7	T; R23 C; R35	Skin Corr.1B (H314) STOT SE 3 (H335)	**

Ingredient	CAS Number	EU EINECS/ELINCS List	EU Classification	GHS Classification	%
Sodium formaldehyde sulfoxylate dihydrate	6035-47-8	Not Listed	Not Listed	Not Listed	*
Disodium EDTA (dihydrate)	6381-92-6	Not Listed	Not Listed	Not Listed	*
Water for Injection	7732-18-5	231-791-2	Not Listed	Not Listed	*

Additional Information:

* Proprietary

** to adjust pH

Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety. In accordance with 29 CFR 1910.1200, the exact percentage composition of this mixture has been withheld as a trade secret.

For the full text of the R phrases and CLP/GHS abbreviations mentioned in this Section, see Section 16

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4. FIRST AID MEASURES

Description of First Aid Measures

- Eye Contact:** Flush with water while holding eyelids open for at least 15 minutes. Seek medical attention immediately.
- Skin Contact:** Remove contaminated clothing. Flush area with large amounts of water. Use soap. Seek medical attention.
- Ingestion:** Never give anything by mouth to an unconscious person. Wash out mouth with water. Do not induce vomiting unless directed by medical personnel. Seek medical attention immediately.
- Inhalation:** Remove to fresh air and keep patient at rest. Seek medical attention immediately.

Most Important Symptoms and Effects, Both Acute and Delayed

- Symptoms and Effects of Exposure:** For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.
- Medical Conditions Aggravated by Exposure:** None known

Indication of the Immediate Medical Attention and Special Treatment Needed

- Notes to Physician:** None

5. FIRE-FIGHTING MEASURES

- Extinguishing Media:** Extinguish fires with CO2, extinguishing powder, foam, or water.

Special Hazards Arising from the Substance or Mixture

- Hazardous Combustion Products:** Formation of toxic gases is possible during heating or fire.
- Fire / Explosion Hazards:** Fine particles (such as dust and mists) may fuel fires/explosions.

Advice for Fire-Fighters

During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

Environmental Precautions

Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

Methods and Material for Containment and Cleaning Up

- Measures for Cleaning / Collecting:** Contain the source of spill if it is safe to do so. Collect spill with absorbent material. Clean spill area thoroughly.
- Additional Consideration for Large Spills:** Non-essential personnel should be evacuated from affected area. Report emergency situations immediately. Clean up operations should only be undertaken by trained personnel.

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7. HANDLING AND STORAGE

Precautions for Safe Handling

When handling, use appropriate personal protective equipment (see Section 8). Keep away from heat, sparks, and flame. Use with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Avoid accidental injection. Wash thoroughly after handling. Releases to the environment should be avoided. Review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure or environmental releases. Potential points of process emissions of this material to the atmosphere should be controlled with dust collectors, HEPA filtration systems or other equivalent controls.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions: Store as directed by product packaging. Keep containers tightly closed in a cool, well-ventilated place

Storage Temperature: 15-30°C (59-86°F)

Incompatible Materials: Acids, bases, and oxidizers

Specific end use(s): No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Refer to available public information for specific member state Occupational Exposure Limits.

Propylene glycol

Australia TWA	150 ppm 474 mg/m ³ 10 mg/m ³
Ireland OEL - TWAs	150 ppm 470 mg/m ³ 10 mg/m ³
Latvia OEL - TWA	7 mg/m ³
Lithuania OEL - TWA	7 mg/m ³

PHENOL

ACGIH Threshold Limit Value (TWA)	5 ppm
ACGIH - Biological Exposure Limit:	250 mg/g creatinine
Australia TWA	1 ppm 4 mg/m ³
Austria OEL - MAKs	2 ppm 8 mg/m ³
Belgium OEL - TWA	2 ppm 8 mg/m ³
Bulgaria OEL - TWA	8 mg/m ³ 2 ppm
Bulgaria - Biological Exposure Limit:	200 mg/L
Cyprus OEL - TWA	8 mg/m ³ 2 ppm
Czech Republic OEL - TWA	7.5 mg/m ³
Denmark OEL - TWA	1 ppm 4 mg/m ³

2,2 IMINODIETHANOL

ACGIH Threshold Limit Value (TWA)	1 mg/m ³
ACGIH - Skin Absorption Designation	Skin - potential significant contribution to overall exposure by the cutaneous route

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Australia TWA	3 ppm 13 mg/m ³
Austria OEL - MAKs	0.46 ppm 2 mg/m ³
Belgium OEL - TWA	0.46 ppm 2 mg/m ³
Bulgaria OEL - TWA	10 mg/m ³
Czech Republic OEL - TWA	5 mg/m ³
Denmark OEL - TWA	0.46 ppm 2 mg/m ³
Estonia OEL - TWA	3 ppm 5 mg/m ³
Finland OEL - TWA	0.46 ppm 2 mg/m ³
France OEL - TWA	3 ppm 15 mg/m ³
Germany (DFG) - MAK	1 mg/m ³
Greece OEL - TWA	3 ppm 15 mg/m ³
Ireland OEL - TWAs	1 mg/m ³
Lithuania OEL - TWA	3 ppm 15 mg/m ³
Poland OEL - TWA	9 mg/m ³
Portugal OEL - TWA	2 mg/m ³
Slovenia OEL - TWA	15 mg/m ³
Spain OEL - TWA	0.46 ppm 2 mg/m ³
Sweden OEL - TWAs	3 ppm 15 mg/m ³
Switzerland OEL -TWAs	1 mg/m ³

HYDROCHLORIC ACID

ACGIH Ceiling Threshold Limit:	2 ppm
Australia PEAK	5 ppm 7.5 mg/m ³
Austria OEL - MAKs	5 ppm 8 mg/m ³
Belgium OEL - TWA	5 ppm 8 mg/m ³
Bulgaria OEL - TWA	5 ppm 8.0 mg/m ³
Cyprus OEL - TWA	5 ppm 8 mg/m ³
Czech Republic OEL - TWA	8 mg/m ³
Estonia OEL - TWA	5 ppm 8 mg/m ³
Germany - TRGS 900 - TWAs	2 ppm 3 mg/m ³
Germany (DFG) - MAK	2 ppm 3.0 mg/m ³
Greece OEL - TWA	5 ppm 7 mg/m ³

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Hungary OEL - TWA	8 mg/m ³
Ireland OEL - TWAs	5 ppm 8 mg/m ³
Italy OEL - TWA	5 ppm 8 mg/m ³
Japan - OELs - Ceilings	5 ppm 7.5 mg/m ³
Latvia OEL - TWA	5 ppm 8 mg/m ³
Lithuania OEL - TWA	5 ppm 8 mg/m ³
Luxembourg OEL - TWA	5 ppm 8 mg/m ³
Malta OEL - TWA	5 ppm 8 mg/m ³
Netherlands OEL - TWA	8 mg/m ³
Vietnam OEL - TWAs	5 mg/m ³
Poland OEL - TWA	5 mg/m ³
Portugal OEL - TWA	5 ppm 8 mg/m ³
Romania OEL - TWA	5 ppm 8 mg/m ³
Slovakia OEL - TWA	5 ppm 8.0 mg/m ³
Slovenia OEL - TWA	5 ppm 8 mg/m ³
Spain OEL - TWA	5 ppm 7.6 mg/m ³
Switzerland OEL -TWAs	2 ppm 3.0 mg/m ³

The purpose of the Occupational Exposure Band (OEB) classification system is to separate substances into different Hazard categories when the available data are sufficient to do so, but inadequate to establish an Occupational Exposure Limit (OEL). The OEB given is based upon an analysis of all currently available data; as such, this value may be subject to revision when new information becomes available.

Flunixin meglumine

Zoetis OEB

OEB 2 (control exposure to the range of 100ug/m³ to < 1000ug/m³)

Exposure Controls

Engineering Controls:

Engineering controls should be used as the primary means to control exposures. Keep air contamination levels below the exposure limits or within the OEB range listed above in this section. General room ventilation is adequate unless the process generates dust, mist or fumes.

Personal Protective Equipment:

Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

Hands:

Impervious gloves are recommended if skin contact with drug product is possible and for bulk processing operations.

Eyes:

Wear safety glasses or goggles if eye contact is possible.

Skin:

Impervious protective clothing is recommended if skin contact with drug product is possible and for bulk processing operations.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection: If airborne exposures are within or exceed the Occupational Exposure Band (OEB) range, wear an appropriate respirator with a protection factor sufficient to control exposures to the bottom of the OEB range. If the applicable Occupational Exposure Limit (OEL) is exceeded, wear an appropriate respirator with a protection factor sufficient to control exposures to below the OEL.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	Color:	Clear, colorless
Odor:	Slight	Odor Threshold:	No data available.
Molecular Formula:	Mixture	Molecular Weight:	Mixture
Solvent Solubility:	No data available		
Water Solubility:	Soluble		
pH:	8.3		
Melting/Freezing Point (°C):	0°C (32°F) based on water		
Boiling Point (°C):	100°C (212°F) based on water		
Partition Coefficient: (Method, pH, Endpoint, Value)	No data available		
Decomposition Temperature (°C):	No data available.		
Evaporation Rate (Gram/s):	No data available		
Vapor Pressure (kPa):	18 mm of Hg (@ 20°C) based on water		
Vapor Density (g/ml):	>1		
Relative Density:	No data available		
Specific Gravity:	1.01		
Viscosity:	No data available		

Flammability:

Autoignition Temperature (Solid) (°C):	No data available
Flammability (Solids):	No data available
Flash Point (Liquid) (°C):	No data available
Upper Explosive Limits (Liquid) (% by Vol.):	No data available
Lower Explosive Limits (Liquid) (% by Vol.):	No data available

10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical Stability:	Stable under normal conditions of use.
Possibility of Hazardous Reactions	
Oxidizing Properties:	No data available
Conditions to Avoid:	Fine particles (such as dust and mists) may fuel fires/explosions.
Incompatible Materials:	Acids, bases, and oxidizers
Hazardous Decomposition Products:	Thermal decomposition products may include oxides of carbon, nitrogen, and sulfur.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

General Information: Toxicological properties of the formulation have not been investigated. The information in this section describes the potential hazards of the individual ingredients and the formulation.
Routes of exposure: eye contact , skin contact

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11. TOXICOLOGICAL INFORMATION

Acute Toxicity: (Species, Route, End Point, Dose)

HYDROCHLORIC ACID

Rat Oral LD 50 238-277 mg/kg

Flunixin meglumine

Rat Inhalation LC50 < 0.52 mg/L

Rat Oral LD50 53-157mg/kg

Propylene glycol

Rat Oral LD 50 22,000 mg/kg

Mouse Oral LD 50 24,900mg/kg

Rabbit Dermal LD 50 20,800mg/kg

PHENOL

Rat Oral LD50 317 mg/kg

Rat Dermal LD50 525mg/kg

Rabbit Dermal LD50 630mg/kg

Mouse Oral LD50 270mg/kg

2,2 IMINODIETHANOL

Rat Oral LD50 710 mg/kg

Rabbit Dermal LD50 11.9ml/kg

Inhalation Acute Toxicity

May be harmful if inhaled. May cause respiratory tract and mucous membrane irritation.

Ingestion Acute Toxicity

Harmful if swallowed.

Irritation / Sensitization: (Study Type, Species, Severity)

Flunixin meglumine

Skin Irritation Rabbit Mild

Eye Irritation Rabbit Severe

Skin Sensitization - GPMT Negative

Propylene glycol

Skin Irritation Rabbit Mild

Eye Irritation Rabbit Mild

2,2 IMINODIETHANOL

Eye Irritation Rabbit Severe

Skin Irritation Rabbit Moderate

Irritation / Sensitization Comments: May cause irreversible eye damage.

Skin Irritation / Sensitization May cause skin irritation.

Repeated Dose Toxicity: (Duration, Species, Route, Dose, End Point, Target Organ)

Flunixin meglumine

1 Year(s) Rat Oral 1 mg/kg/day NOEL Gastrointestinal System, Kidney

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11. TOXICOLOGICAL INFORMATION

Reproduction & Developmental Toxicity: (Study Type, Species, Route, Dose, End Point, Effect(s))

Flunixin meglumine

Fertility and Embryonic Development Rat Oral 2-12 mg/kg NOEL Not teratogenic
Reproductive & Fertility Rat Oral 3-9 mg/kg NOEL Maternal Toxicity

PHENOL

2 Generation Reproductive Toxicity Rat Oral 1000 ppm NOAEL No effects at maximum dose
Embryo / Fetal Development Rat Oral 120 mg/kg LOAEL Fetotoxicity, Not Teratogenic
Fertility and Embryonic Development Rat Oral 53 mg/kg LOAEL Maternal Toxicity, Fetotoxicity, Not Teratogenic
Embryo / Fetal Development Rat Intraperitoneal 200 mg/kg NOAEL No effects at maximum dose

Genetic Toxicity: (Study Type, Cell Type/Organism, Result)

Flunixin meglumine

Bacterial Mutagenicity (Ames) Bacteria Negative
Micronucleus Mouse Negative
Chromosome Aberration Chinese Hamster Ovary (CHO) cells Positive
Mammalian Cell Mutagenicity Mouse Lymphoma Positive

Carcinogenicity: (Duration, Species, Route, Dose, End Point, Effect(s))

Flunixin meglumine

104 Week(s) Rat Oral, in feed 8 mg/kg/day NOEL Not carcinogenic
97 Week(s) Mouse Oral, in feed 6 mg/kg/day NOEL Not carcinogenic

PHENOL

103 Week(s) Rat Oral 5,000 ppm NOAEL Not carcinogenic
103 Week(s) Mouse Oral 5,000 ppm NOAEL Not carcinogenic

Carcinogen Status: See below

HYDROCHLORIC ACID

IARC: Group 3 (Not Classifiable)

2,2 IMINODIETHANOL

IARC: Group 2B (Possibly Carcinogenic to Humans)

Product Level Toxicity Data

Acute Toxicity Estimate (ATE),
oral 1000 mg/kg
Acute Toxicity Estimate (ATE),
inhalation (dust/mist) 10 mg/l
Acute Toxicity Estimate (ATE),
dermal >5000 mg/kg

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12. ECOLOGICAL INFORMATION

Environmental Overview: Environmental properties of the formulation have not been investigated. The following information is available for the individual ingredients. may be harmful to aquatic organisms. Releases to the environment should be avoided.

Toxicity:

Aquatic Toxicity: (Species, Method, End Point, Duration, Result)

Flunixin meglumine

Lepomis macrochirus (Bluegill Sunfish) LC50 96 Hours 46 mg/L
Salmo gairdneri (Trout) LC50 96 Hours 9.2 mg/L
Daphnia Magna (Water Flea) EC50 48 Hours 25 mg/L
Algae IC50 72 Hours 36-120 mg/L

PHENOL

Selenastrum capricornutum (Green Alga) EC50 96 Hours 150 mg/L
Pimephales promelas (Fathead Minnow) LC50 96 Hours 24 mg/L
Oncorhynchus mykiss (Rainbow Trout) LC50 96 Hours 8.9 mg/L
Lepomis macrochirus (Bluegill Sunfish) LC50 96 Hours 23.88 mg/L
Daphnia magna (Water Flea) LC50 48 Hours 13 mg/L

Persistence and Degradability: No data available

Bio-accumulative Potential: No data available

Mobility in Soil: No data available

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

14. TRANSPORT INFORMATION

The following refers to all modes of transportation unless specified below.

Not regulated for transport under USDOT, EUADR, IATA, or IMDG regulations.

U.S. DOT Reportable Quantity (RQ), 49 CFR 172.101 Appendix A:

2,2 IMINODIETHANOL

PZ01728

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CERCLA/SARA Hazardous Substances
and their Reportable Quantities: 100 lb
45.4 kg

HYDROCHLORIC ACID
CERCLA/SARA Hazardous Substances
and their Reportable Quantities: 5000 lb
2270 kg

15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

Canada - WHMIS: Classifications

WHMIS hazard class:

Class D, Division 2, Subdivision A

Class D, Division 2, Subdivision B

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.



Propylene glycol

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Inventory - United States TSCA - Sect. 8(b)	Present
Australia (AICS):	Present
EU EINECS/ELINCS List	200-338-0

Flunixin meglumine

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Australia (AICS):	Present
Standard for the Uniform Scheduling for Drugs and Poisons:	Schedule 4
EU EINECS/ELINCS List	255-836-0

PHENOL

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
EU EINECS/ELINCS List	203-632-7

2,2 IMINODIETHANOL

CERCLA/SARA 313 Emission reporting	1.0 %
CERCLA/SARA Hazardous Substances and their Reportable Quantities:	100 lb 45.4 kg
California Proposition 65	carcinogen initial date 6/22/12
Inventory - United States TSCA - Sect. 8(b)	Present

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15. REGULATORY INFORMATION

Australia (AICS):	Present
Standard for the Uniform Scheduling	Schedule 5
for Drugs and Poisons:	Schedule 6
EU EINECS/ELINCS List	203-868-0

HYDROCHLORIC ACID

CERCLA/SARA 313 Emission reporting	1.0 %
CERCLA/SARA Hazardous Substances	5000 lb
and their Reportable Quantities:	2270 kg
CERCLA/SARA - Section 302 Extremely Hazardous	500 lb
TPQs	
CERCLA/SARA - Section 302 Extremely Hazardous	5000 lb
Substances EPCRA RQs	
California Proposition 65	Not Listed
Inventory - United States TSCA - Sect. 8(b)	Present
Australia (AICS):	Present
Standard for the Uniform Scheduling	Schedule 5
for Drugs and Poisons:	Schedule 6
EU EINECS/ELINCS List	231-595-7

Sodium formaldehyde sulfoxylate dihydrate

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
EU EINECS/ELINCS List	Not Listed

Disodium EDTA (dihydrate)

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Australia (AICS):	Present
EU EINECS/ELINCS List	Not Listed

Water for Injection

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Inventory - United States TSCA - Sect. 8(b)	Present
Australia (AICS):	Present
REACH - Annex IV - Exemptions from the	Present
obligations of Register:	
EU EINECS/ELINCS List	231-791-2

16. OTHER INFORMATION

Text of R phrases and GHS Classification abbreviations mentioned in Section 3

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H302 - Harmful if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure
H315 - Causes skin irritation
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H300 - Fatal if swallowed
H401 - Toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation
H301 - Toxic if swallowed
H341 - Suspected of causing genetic defects
H331 - Toxic if inhaled

R22 - Harmful if swallowed.
R26 - Very toxic by inhalation.
R34 - Causes burns.
R35 - Causes severe burns.
R38 - Irritating to skin.
R41 - Risk of serious damage to eyes.
R68 - Possible risks of irreversible effects.
R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed.
R48/20/21/22 - Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Data Sources: The data contained in this SDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.

Reasons for Revision: Updated Section 2 - Hazard Identification. Updated Section 11 - Toxicology Information.
Updated Section 15 - Regulatory Information. Updated Section 10 - Stability and Reactivity.
Updated Section 9 - Physical and Chemical Properties.

Prepared by: Toxicology and Hazard Communication
Zoetis Global Risk Management

Zoetis Inc. believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time.

End of Safety Data Sheet