

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version 2.1      Revision Date: 09/28/2024      SDS Number: 11259180-00004      Date of last issue: 09/20/2023  
Date of first issue: 08/11/2023

### SECTION 1. IDENTIFICATION

Product name : Insulin Porcine (with Metacresol) Formulation  
Other means of identification : No data available

#### Manufacturer or supplier's details

Company name of supplier : Merck & Co., Inc  
Address : 126 E. Lincoln Avenue  
Rahway, New Jersey U.S.A. 07065  
Telephone : 908-740-4000  
Emergency telephone : 1-908-423-6000  
E-mail address : EHSDATASTEWARD@merck.com

#### Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product  
Restrictions on use : Not applicable

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the Hazardous Products Regulations

Not a hazardous substance or mixture.

#### GHS label elements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

#### Other hazards

None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
m-Cresol	Phenol, 3-methyl-	108-39-4	0.23
Insulin (ox), 8A-l-threonine-10A-l-isoleucine-	No data available	12584-58-6	0.15

### SECTION 4. FIRST AID MEASURES

If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.  
In case of skin contact : Wash with water and soap as a precaution.  
Get medical attention if symptoms occur.  
In case of eye contact : Flush eyes with water as a precaution.  
Get medical attention if irritation develops and persists.  
If swallowed : If swallowed, DO NOT induce vomiting.

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

Most important symptoms and effects, both acute and delayed	:	Get medical attention if symptoms occur. Rinse mouth thoroughly with water. None known.
Protection of first-aiders	:	No special precautions are necessary for first aid responders.
Notes to physician	:	Treat symptomatically and supportively.

### SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO <sub>2</sub> ) Dry chemical
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	No hazardous combustion products are known
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
Environmental precautions	:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version 2.1      Revision Date: 09/28/2024      SDS Number: 11259180-00004      Date of last issue: 09/20/2023  
Date of first issue: 08/11/2023

can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

### SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.  
Local/Total ventilation : Use only with adequate ventilation.  
Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Take care to prevent spills, waste and minimize release to the environment.  
Conditions for safe storage : Keep in properly labeled containers.  
Store in accordance with the particular national regulations.  
Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents  
Gases

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
m-Cresol	108-39-4	TWA	5 ppm 22 mg/m <sup>3</sup>	CA AB OEL
		TWAEV (inhalable fraction and vapour)	20 mg/m <sup>3</sup>	CA QC OEL
		TWA	10 mg/m <sup>3</sup>	CA BC OEL
		TWA (Inhalable fraction and vapor)	20 mg/m <sup>3</sup>	ACGIH
Insulin (ox), 8A-I-threonine-10A-I-isoleucine-	12584-58-6	TWA	3 µg/m <sup>3</sup> (OEB 4)	Internal

Engineering measures : All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

Essentially no open handling permitted.  
Use closed processing systems or containment technologies.  
If handled in a laboratory, use a properly designed biosafety cabinet, fume hood, or other containment device if the potential exists for aerosolization. If this potential does not exist, handle over lined trays or benchtops.

### Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving.

Eye protection : Wear safety glasses with side shields or goggles.  
If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.  
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection : Work uniform or laboratory coat.  
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.  
Use appropriate degowning techniques to remove potentially contaminated clothing.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.  
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : suspension

Color : white to off-white

Odor : No data available

Odor Threshold : No data available

pH : 6.9 - 7.8

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1.003 g/cm <sup>3</sup>
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available
Particle characteristics		
Particle size	:	Not applicable

### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Can react with strong oxidizing agents.
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

Hazardous decomposition products : No hazardous decomposition products are known.

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Inhalation  
Skin contact  
Ingestion  
Eye contact

#### Acute toxicity

Not classified based on available information.

#### Product:

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method

#### Components:

##### **m-Cresol:**

Acute oral toxicity : LD50 (Rat): 121 mg/kg  
Remarks: Based on data from similar materials

Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): 301 mg/kg  
Remarks: Based on data from similar materials

##### **Insulin (ox), 8A-I-threonine-10A-I-isoleucine-:**

Acute toxicity (other routes of administration) : LD50 (Rat): > 36 mg/kg

#### **Skin corrosion/irritation**

Not classified based on available information.

#### Components:

##### **m-Cresol:**

Species : Rabbit  
Result : Corrosive after 3 minutes to 1 hour of exposure

##### **Insulin (ox), 8A-I-threonine-10A-I-isoleucine-:**

Remarks : No data available

#### **Serious eye damage/eye irritation**

Not classified based on available information.

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

### Components:

#### **m-Cresol:**

Species	:	Rabbit
Result	:	Irreversible effects on the eye

#### **Insulin (ox), 8A-I-threonine-10A-I-isoleucine-:**

Remarks	:	No data available
---------	---	-------------------

### **Respiratory or skin sensitization**

#### **Skin sensitization**

Not classified based on available information.

#### **Respiratory sensitization**

Not classified based on available information.

#### **Germ cell mutagenicity**

Not classified based on available information.

### Components:

#### **m-Cresol:**

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: positive  Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
Genotoxicity in vivo	:	Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Mouse Application Route: Ingestion Method: OECD Test Guideline 475 Result: negative

#### **Insulin (ox), 8A-I-threonine-10A-I-isoleucine-:**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Test system: Salmonella typhimurium Method: OECD Test Guideline 471 Result: negative  Test Type: Chromosome aberration test in vitro Test system: Chinese hamster lung cells Method: OECD Test Guideline 473 Result: negative
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Cell type: Bone marrow Method: OECD Test Guideline 475 Result: negative

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### Carcinogenicity

Not classified based on available information.

#### Components:

##### **m-Cresol:**

Species : Mouse, males  
Application Route : Ingestion  
Exposure time : 105 weeks  
Result : equivocal  
Remarks : Based on data from similar materials

Species : Mouse, female  
Application Route : Ingestion  
Exposure time : 106 - 107 weeks  
Result : positive  
Remarks : Based on data from similar materials

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

##### **Insulin (ox), 8A-I-threonine-10A-I-isoleucine-:**

Species : Rat  
Application Route : Subcutaneous  
Exposure time : 2 Years  
LOAEL : 180 µg/kg

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

### Reproductive toxicity

Not classified based on available information.

#### Components:

##### **m-Cresol:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on fetal development : Test Type: Prenatal development toxicity study (teratogenicity)  
Species: Rat  
Application Route: Ingestion  
Result: negative

##### **Insulin (ox), 8A-I-threonine-10A-I-isoleucine-:**

Effects on fertility : Test Type: Fertility/early embryonic development



# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

Species: Rat  
Application Route: Intraperitoneal  
Fertility: NOAEL Mating/Fertility: 360 µg/kg  
Symptoms: No effects on fertility.  
Result: No effects on fertility and early embryonic development were detected.

### STOT-single exposure

Not classified based on available information.

### STOT-repeated exposure

Not classified based on available information.

### Repeated dose toxicity

#### Components:

##### **m-Cresol:**

Species	: Rat
NOAEL	: 150 mg/kg
Application Route	: Ingestion
Exposure time	: 13 Weeks
Method	: OECD Test Guideline 408

##### **Insulin (ox), 8A-I-threonine-10A-I-isoleucine-:**

Species	: Rat
	: 5.8 mg/kg
Application Route	: Inhalation
Exposure time	: 6 Months
Symptoms	: Hypoglycemia

Species	: Monkey
	: 0.64 mg/kg
Application Route	: Inhalation
Exposure time	: 6 Months
Symptoms	: Hypoglycemia

Species	: Rat
NOAEL	: 0.085 mg/kg
Application Route	: Subcutaneous
Exposure time	: 1 Months

Species	: Dog
NOAEL	: 0.07 mg/kg
Application Route	: Subcutaneous
Exposure time	: 1 Months

### Aspiration toxicity

Not classified based on available information.

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

### Experience with human exposure

#### Components:

##### **Insulin (ox), 8A-I-threonine-10A-I-isoleucine-:**

Inhalation : Symptoms: Hypoglycemia, Fatigue, Drowsiness, Sweating, Headache, Nausea, Palpitation, tingling, numbness, altered mental status, Breathing difficulties

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **m-Cresol:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 8.6 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia pulex (Water flea)): > 99.5 mg/l  
aquatic invertebrates Exposure time: 48 h

Toxicity to fish (Chronic tox- : NOEC (Pimephales promelas (fathead minnow)): 1.35 mg/l  
icity) Exposure time: 32 d  
Remarks: Based on data from similar materials

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 1 mg/l  
aquatic invertebrates (Chron- Exposure time: 21 d  
ic toxicity) Remarks: Based on data from similar materials

### Persistence and degradability

#### Components:

##### **m-Cresol:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 90 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

### Bioaccumulative potential

#### Components:

##### **m-Cresol:**

Bioaccumulation : Species: Leuciscus idus (Golden orfe)  
Bioconcentration factor (BCF): 17 - 20

Partition coefficient: n- : log Pow: 1.96  
octanol/water

#### **Mobility in soil**

No data available

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

### Other adverse effects

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues	:	Do not dispose of waste into sewer. Dispose of in accordance with local regulations.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

Not regulated as a dangerous good

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### Domestic regulation

#### TDG

Not regulated as a dangerous good

### Special precautions for user

Not applicable

## SECTION 15. REGULATORY INFORMATION

### The ingredients of this product are reported in the following inventories:

AICS	:	not determined
DSL	:	not determined
IECSC	:	not determined

## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour, time-weighted average
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA QC OEL / TWAEV	:	Time-weighted average exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <a href="http://echa.europa.eu/">http://echa.europa.eu/</a>
--	---	---

Revision Date	:	09/28/2024
Date format	:	mm/dd/yyyy

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Insulin Porcine (with Metacresol) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 09/20/2023
2.1	09/28/2024	11259180-00004	Date of first issue: 08/11/2023

---

in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

CA / Z8