

## SAFETY DATA SHEETS

**This SDS packet was issued with item:**

078354578

N/A



Merck Animal Health  
One Merck Dr.  
Whitehouse Station, NJ 08889

## MATERIAL SAFETY DATA SHEET

Merck Animal Health urges each user or recipient of this MSDS to read the entire data sheet to become aware of the hazards associated with this material.

### SECTION 1. IDENTIFICATION OF SUBSTANCE AND CONTACT INFORMATION

**MSDS NAME:** Orbenin DC

**SYNONYM(S):** Orbenin DC

**MSDS NUMBER:** SP002670

**EMERGENCY NUMBER(S):** Rocky Mountain Poison Center (For Human Exposure):  
(303) 595-4869

Animal Health Technical Services:  
For Animal Adverse Events: Small Animals and Horses: (800) 224-5318  
For Animal Adverse Events: Livestock: (800) 211-3573  
For Animal Adverse Events: Poultry: (800) 219-9286

(908) 423-6000 (24/7/365) English Only  
Emergencies - CHEMTREC:  
(800) 424-9300 (Inside Continental USA)  
(703) 527-3887 (Outside Continental USA)

**INFORMATION:** Animal Health Technical Services:  
For Small Animals and Horses: (800) 224-5318  
For Livestock: (800) 211-3573  
For Poultry: (800) 219-9286

**MERCK MSDS HELPLINE:** (800) 770-8878 (US and Canada)  
(908) 473-3371 (Worldwide)  
Monday to Friday, 9am to 5pm (US Eastern Time)

### SECTION 2. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

Suspension, in syringe  
Pale yellow  
Characteristic odor  
May be irritating to skin.  
May cause allergic reaction in sensitive individuals or those allergic to Cephalosporins or Penicillin.  
*May cause effects to:*  
gastrointestinal tract

#### POTENTIAL HEALTH EFFECTS:

The toxicological properties of the mixture(s) have not been fully characterized in humans or animals. However, there are data to describe the toxicological properties of the individual ingredients. The following summary is based upon available information about the individual ingredients of the mixture(s), or of the expected properties of the mixture(s).

Cloxacillin is a penicillin derivative. Cross sensitivity with penicillin is possible. Rashes and urticaria are the principal reactions. Hypersensitivity can occur and is evident by skin reactions such as rashes, wheals and serum sickness after patient use. Anaphylactic reactions are possible but rare. No adverse reactions from penicillin class compounds have been reported during pregnancy.

Peanut oil may cause skin irritation upon prolonged or repeated exposure.

## LISTED CARCINOGENS

No carcinogens or potential carcinogens listed by OSHA, IARC, NTP or ACGIH are present in concentrations >0.1% in this mixture.

### SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

**CHEMICAL FAMILY:** Antibiotic

**PRODUCT USE:** Veterinary product

**CHEMICAL FORMULA:** Mixture.

The formulation for this product is proprietary information. Only hazardous ingredients in concentrations of 1% or greater and/or carcinogenic ingredients in concentrations of 0.1% or greater are listed in the Chemical Composition table. Active ingredients in any concentration are listed. For additional information about carcinogenic ingredients see Section 2.

## CHEMICAL COMPOSITION

INGREDIENT	CAS NUMBER	PERCENT
Peanut Oil	8002-03-7	80-90
Cloxacillin	32222-55-2	7

**ADDITIONAL INFORMATION:** This MSDS is written to provide health and safety information for individuals who will be handling the final product formulation during research, manufacturing, and distribution. For health and safety information for individual ingredients used during manufacturing, refer to the appropriate MSDS for each ingredient. Refer to the package insert or product label for handling guidance for the consumer.

### SECTION 4. FIRST AID MEASURES

**INHALATION:** Remove to fresh air. If any trouble breathing, get immediate medical attention. Administer artificial respiration if breathing has ceased. If irritation or symptoms occur or persist, consult a physician.

**SKIN CONTACT:** In case of skin contact, while wearing protective gloves, carefully remove any contaminated clothing, including shoes, and wash skin thoroughly with soap and water. If irritation or symptoms occur or persist, consult a physician.

**EYE CONTACT:** In case of eye contact, immediately rinse eyes thoroughly with plenty of water. If wearing contact lenses, remove only after initial rinse, and continue rinsing eyes for at least 15 minutes. If irritation occurs or persists, consult a physician.

**INGESTION:** Rinse mouth and drink a glass of water. Do not induce vomiting unless under the direction of a qualified medical professional or Poison Control Center. If symptoms persist, consult a physician.

### SECTION 5. FIRE FIGHTING MEASURES

#### FLAMMABILITY DATA:

Flash Point: Not determined (liquids) or not applicable (solids).

#### SPECIAL FIRE HAZARDS:

Material is combustible and will burn at high temperatures. Emits toxic and corrosive fumes under fire conditions.

#### SPECIAL FIRE FIGHTING PROCEDURES:

Wear full protective clothing and self-contained breathing apparatus (SCBA).

#### SUITABLE EXTINGUISHING MEDIA:

Carbon dioxide (CO<sub>2</sub>), extinguishing powder or water spray.

See Section 9 for Physical and Chemical Properties.

**MSDS NAME:** Orbenin DC

**MSDS NUMBER:** SP002670

Latest Revision Date: 06-Sep-2012

Page 2 of 5

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS:

Wear appropriate personal protective equipment as specified in Section 8. Keep personnel away from the clean-up area.

### SPILL RESPONSE / CLEANUP:

All spills should be handled according to site requirements and based on precautions cited in the MSDS. In the case of liquids, use proper absorbent materials. For laboratories and small-scale operations, incidental spills within a hood or enclosure should be cleaned by using a HEPA filtered vacuum or wet cleaning methods as appropriate. For large dry or liquid spills or those spills outside enclosure or hood, appropriate emergency response personnel should be notified. In manufacturing and large-scale operations, HEPA vacuuming prior to wet mopping or cleaning is required.

See Sections 9 and 10 for additional physical, chemical, and hazard information.

## SECTION 7. HANDLING AND STORAGE

### HANDLING:

Keep containers adequately sealed during material transfer, transport, or when not in use. Wash face, hands, and any exposed skin after handling. Do not eat, drink, or smoke when using this substance or mixture.

Appropriate handling of this material is dependent on many factors, including physical form, duration and frequency of process or task, and effectiveness of engineering controls. Site-specific risk assessments should be conducted to determine the feasibility and the appropriateness of all exposure control measures. See Section 8 (Exposure Controls) for additional guidance.

### STORAGE:

Keep away from heat, sparks, open flames, and direct sunlight. Store in a cool, dry, well ventilated area. Do not store at temperatures above 24 deg C (75 deg F). Keep in closed tight containers.

### SPECIAL PRECAUTIONS:

Avoid self-inoculation or needle sticks.

See Section 8 for exposure controls and additional safe handling information.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### EXPOSURE CONTROLS

The health hazard risks of handling this material are dependent on many factors, including physical form, duration and frequency of process or task, and effectiveness of engineering controls. Site-specific risk assessments should be conducted to determine the feasibility and the appropriateness of all exposure control measures. Exposure controls for normal operating or routine procedures follow a tiered strategy. Engineering controls are the preferred means of long-term or permanent exposure control. If engineering controls are not feasible, appropriate use of personal protective equipment (PPE) may be considered as alternative control measures. Exposure controls for non-routine operations must be evaluated and addressed as part of the site-specific risk assessment.

### RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE):

Respiratory Protection:	Respiratory protective equipment (RPE) may be required for certain laboratory and large-scale manufacturing tasks if potential airborne breathing zone concentrations of substances exceed the relevant exposure limit(s). Workplace risk assessment should be completed before specifying and implementing RPE usage. Potential exposure points and pathways, task duration and frequency, potential employee contact with the substance, and the ability of the substance to be rendered airborne during specific tasks should be evaluated. Initial and ongoing strategies of quantitative exposure measurement should be obtained as required by the workplace risk assessment. All RPE must conform to local and regional specifications for efficacy and performance. Consult your site or corporate health and safety professional for additional guidance.
Skin Protection:	Gloves that provide an appropriate barrier to the skin are recommended if there is potential for contact with this material. Consult your site safety staff for guidance.
Eye Protection:	Safety glasses with side shields. Use of goggles or full face protection may be required based on hazard, potential for contact, or level of exposure. Consult your site safety staff for guidance.
Body Protection:	<p>In small-scale or laboratory operations, lab coats or equivalent protection is required. Disposable Tyvek or other dust impermeable suit should be considered based on procedure or level of exposure. Use of additional PPE such as shoe coverings, gauntlets, hood, or head covering may be necessary. Consult your site safety staff for guidance.</p> <p>In large-scale or manufacturing operations, disposable Tyvek or other dust impermeable suit is recommended and based on level of exposure. Use of additional PPE such as shoe coverings, gauntlets, hood, or head covering may be necessary. Consult your site safety staff for guidance.</p>

MSDS NAME: Orbenin DC

MSDS NUMBER: SP002670

Latest Revision Date: 06-Sep-2012

Page 3 of 5

## EXPOSURE LIMIT VALUES

No exposure limits are available for the active ingredient(s) or any other hazardous ingredient in this formulation.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**FORM:** Suspension, in syringe  
**COLOR:** Pale yellow  
**ODOR:** Characteristic odor  
**SOLUBILITY:**  
Water: Insoluble  
Other: Soluble in most organics.

See Section 5 for flammability/explosivity information.

### SECTION 10. STABILITY AND REACTIVITY

**STABILITY/ REACTIVITY:**  
Stable under normal conditions.

**INCOMPATIBLE MATERIALS / CONDITIONS TO AVOID:**  
Keep away from heat, sparks, open flame, and direct sunlight. Strong Oxidizers.

**HAZARDOUS DECOMPOSITION PRODUCTS / REACTIONS:**  
No dangerous decomposition is expected if used according to manufacturer's specifications.

### SECTION 11. TOXICOLOGICAL INFORMATION

The information presented below is for the active ingredient(s) in this product.

#### ACUTE TOXICITY DATA

**INHALATION:**  
No data available.

**SKIN:**  
Peanut Oil was found to be a moderate irritant on the skin of rabbits at 100 mg/24 hour exposure.

**EYE:**  
No data available.

**ORAL:**  
Cloxacillin: Oral LD50: 5000 mg/kg (rat and mouse)

**DERMAL AND RESPIRATORY SENSITIZATION:**  
No data available.

#### REPEAT DOSE TOXICITY DATA

**SUBCHRONIC / CHRONIC TOXICITY:**  
Cloxacillin: In a rat intravenous study given 7000 mg/kg for 4-weeks caused changes in lung and liver weights and resulted in hypoglycemia.

**REPRODUCTIVE / DEVELOPMENTAL TOXICITY:**  
Cloxacillin did not cause teratogenic effects at 100 mg/kg in rabbits. Cloxacillin crosses the placenta and is distributed in breast milk. A 500 mg dose in a pregnant women results in a milk concentration of 0.2-0.4 mcg/mL in 4-6 hours.

**MUTAGENICITY / GENOTOXICITY:**  
No data available.

**CARCINOGENICITY:**  
Peanut oil given to mice orally at a dose of 1040 gm/kg for 1 year was found to cause gastrointestinal tumors.

### SECTION 12. ECOLOGICAL INFORMATION

#### ECOTOXICITY DATA

**MSDS NAME:** Orbenin DC

**MSDS NUMBER:** SP002670

Latest Revision Date: 06-Sep-2012

Page 4 of 5

There are no ecotoxicity data available for this product or its components.

#### ENVIRONMENTAL DATA

There are no environmental data available for this product or its components.

### SECTION 13. DISPOSAL CONSIDERATIONS

#### MATERIAL WASTE:

Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations. Incineration is the preferred method of disposal, when appropriate. Operations that involve the crushing or shredding of waste materials or returned goods must be handled to meet the recommended exposure limit(s).

#### PACKAGING AND CONTAINERS:

Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations.

### SECTION 14. TRANSPORT INFORMATION

This material is not subject to the transportation regulations of DOT, IATA, IMO, and the ADR.

### SECTION 15. REGULATORY INFORMATION

#### TSCA LISTING

INGREDIENT	TSCA
Peanut Oil	X

Substances not included in the table above are TSCA exempt or not regulated under TSCA.

#### U.S. STATE REGULATIONS

INGREDIENT	PARTK	MNRTK	MIRTK	RIRTK
Peanut Oil	X			X

Fields in the above tables that do not contain data indicate that those materials have not been listed by local regulations.

X: Listed on applicable state hazardous substance or right-to-know lists.

### SECTION 16. OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequence of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

#### DEPARTMENT ISSUING MSDS:

Global Safety & the Environment  
Merck & Co., Inc.  
One Merck Drive  
Whitehouse Station, NJ 08889

#### MERCK MSDS HELPLINE:

(800) 770-8878 (US and Canada)  
(908) 473-3371 (Worldwide)  
Monday to Friday, 9am to 5pm (US Eastern Time)

#### SIGNIFICANT CHANGES (US SUBFORMAT):

New regional format

MSDS NAME: Orbenin DC

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Latest Revision Date: 06-Sep-2012

Page 5 of 5



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### SECTION 2. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

Suspension, in syringe  
Pale yellow  
Characteristic odor  
May be irritating to skin.  
May cause allergic reaction in sensitive individuals or those allergic to Cephalosporins or Penicillin.  
*May cause effects to:*  
gastrointestinal tract

#### POTENTIAL HEALTH EFFECTS:

The toxicological properties of the mixture(s) have not been fully characterized in humans or animals. However, there are data to describe the toxicological properties of the individual ingredients. The following summary is based upon available information about the individual ingredients of the mixture(s), or of the expected properties of the mixture(s).

Cloxacillin is a penicillin derivative. Cross sensitivity with penicillin is possible. Rashes and urticaria are the principal reactions. Hypersensitivity can occur and is evident by skin reactions such as rashes, wheals and serum sickness after patient use. Anaphylactic reactions are possible but rare. No adverse reactions from penicillin class compounds have been reported during pregnancy.

Peanut oil may cause skin irritation upon prolonged or repeated exposure.

## LISTED CARCINOGENS

No carcinogens or potential carcinogens listed by OSHA, IARC, NTP or ACGIH are present in concentrations >0.1% in this mixture.

### SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

**CHEMICAL FAMILY:** Antibiotic

**PRODUCT USE:** Veterinary product

**CHEMICAL FORMULA:** Mixture.

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Peanut Oil	8002-03-7	80-90
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### SECTION 4. FIRST AID MEASURES

**INHALATION:** Remove to fresh air. If any trouble breathing, get immediate medical attention. Administer artificial respiration if breathing has ceased. If irritation or symptoms occur or persist, consult a physician.

**SKIN CONTACT:** In case of skin contact, while wearing protective gloves, carefully remove any contaminated clothing, including shoes, and wash skin thoroughly with soap and water. If irritation or symptoms occur or persist, consult a physician.

**EYE CONTACT:** In case of eye contact, immediately rinse eyes thoroughly with plenty of water. If wearing contact lenses, remove only after initial rinse, and continue rinsing eyes for at least 15 minutes. If irritation occurs or persists, consult a physician.

**INGESTION:** Rinse mouth and drink a glass of water. Do not induce vomiting unless under the direction of a qualified medical professional or Poison Control Center. If symptoms persist, consult a physician.

### SECTION 5. FIRE FIGHTING MEASURES

#### FLAMMABILITY DATA:

Flash Point: Not determined (liquids) or not applicable (solids).

#### SPECIAL FIRE HAZARDS:

Material is combustible and will burn at high temperatures. Emits toxic and corrosive fumes under fire conditions.

#### SPECIAL FIRE FIGHTING PROCEDURES:

Wear full protective clothing and self-contained breathing apparatus (SCBA).

#### SUITABLE EXTINGUISHING MEDIA:

Carbon dioxide (CO<sub>2</sub>), extinguishing powder or water spray.

See Section 9 for Physical and Chemical Properties.

**MSDS NAME:** Orbenin DC

**MSDS NUMBER:** SP002670

Latest Revision Date: 06-Sep-2012

Page 2 of 5



## SECTION 6. ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS:

Wear appropriate personal protective equipment as specified in Section 8. Keep personnel away from the clean-up area.

### SPILL RESPONSE / CLEANUP:

All spills should be handled according to site requirements and based on precautions cited in the MSDS. In the case of liquids, use proper absorbent materials. For laboratories and small-scale operations, incidental spills within a hood or enclosure should be cleaned by using a HEPA filtered vacuum or wet cleaning methods as appropriate. For large dry or liquid spills or those spills outside enclosure or hood, appropriate emergency response personnel should be notified. In manufacturing and large-scale operations, HEPA vacuuming prior to wet mopping or cleaning is required.

See Sections 9 and 10 for additional physical, chemical, and hazard information.

## SECTION 7. HANDLING AND STORAGE

### HANDLING:

Keep containers adequately sealed during material transfer, transport, or when not in use. Wash face, hands, and any exposed skin after handling. Do not eat, drink, or smoke when using this substance or mixture.

Appropriate handling of this material is dependent on many factors, including physical form, duration and frequency of process or task, and effectiveness of engineering controls. Site-specific risk assessments should be conducted to determine the feasibility and the appropriateness of all exposure control measures. See Section 8 (Exposure Controls) for additional guidance.

### STORAGE:

Keep away from heat, sparks, open flames, and direct sunlight. Store in a cool, dry, well ventilated area. Do not store at temperatures above 24 deg C (75 deg F). Keep in closed tight containers.

### SPECIAL PRECAUTIONS:

Avoid self-inoculation or needle sticks.

See Section 8 for exposure controls and additional safe handling information.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### EXPOSURE CONTROLS

The health hazard risks of handling this material are dependent on many factors, including physical form, duration and frequency of process or task, and effectiveness of engineering controls. Site-specific risk assessments should be conducted to determine the feasibility and the appropriateness of all exposure control measures. Exposure controls for normal operating or routine procedures follow a tiered strategy. Engineering controls are the preferred means of long-term or permanent exposure control. If engineering controls are not feasible, appropriate use of personal protective equipment (PPE) may be considered as alternative control measures. Exposure controls for non-routine operations must be evaluated and addressed as part of the site-specific risk assessment.

### RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE):

Respiratory Protection:	Respiratory protective equipment (RPE) may be required for certain laboratory and large-scale manufacturing tasks if potential airborne breathing zone concentrations of substances exceed the relevant exposure limit(s). Workplace risk assessment should be completed before specifying and implementing RPE usage. Potential exposure points and pathways, task duration and frequency, potential employee contact with the substance, and the ability of the substance to be rendered airborne during specific tasks should be evaluated. Initial and ongoing strategies of quantitative exposure measurement should be obtained as required by the workplace risk assessment. All RPE must conform to local and regional specifications for efficacy and performance. Consult your site or corporate health and safety professional for additional guidance.
Skin Protection:	Gloves that provide an appropriate barrier to the skin are recommended if there is potential for contact with this material. Consult your site safety staff for guidance.
Eye Protection:	Safety glasses with side shields. Use of goggles or full face protection may be required based on hazard, potential for contact, or level of exposure. Consult your site safety staff for guidance.
Body Protection:	<p>In small-scale or laboratory operations, lab coats or equivalent protection is required. Disposable Tyvek or other dust impermeable suit should be considered based on procedure or level of exposure. Use of additional PPE such as shoe coverings, gauntlets, hood, or head covering may be necessary. Consult your site safety staff for guidance.</p> <p>In large-scale or manufacturing operations, disposable Tyvek or other dust impermeable suit is recommended and based on level of exposure. Use of additional PPE such as shoe coverings, gauntlets, hood, or head covering may be necessary. Consult your site safety staff for guidance.</p>

## EXPOSURE LIMIT VALUES

No exposure limits are available for the active ingredient(s) or any other hazardous ingredient in this formulation.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**FORM:** Suspension, in syringe  
**COLOR:** Pale yellow  
**ODOR:** Characteristic odor  
**SOLUBILITY:**  
Water: Insoluble  
Other: Soluble in most organics.

See Section 5 for flammability/explosivity information.

### SECTION 10. STABILITY AND REACTIVITY

**STABILITY/ REACTIVITY:**  
Stable under normal conditions.

**INCOMPATIBLE MATERIALS / CONDITIONS TO AVOID:**  
Keep away from heat, sparks, open flame, and direct sunlight. Strong Oxidizers.

**HAZARDOUS DECOMPOSITION PRODUCTS / REACTIONS:**  
No dangerous decomposition is expected if used according to manufacturer's specifications.

### SECTION 11. TOXICOLOGICAL INFORMATION

The information presented below is for the active ingredient(s) in this product.

#### ACUTE TOXICITY DATA

**INHALATION:**  
No data available.

**SKIN:**  
Peanut Oil was found to be a moderate irritant on the skin of rabbits at 100 mg/24 hour exposure.

**EYE:**  
No data available.

**ORAL:**  
Cloxacillin: Oral LD50: 5000 mg/kg (rat and mouse)

**DERMAL AND RESPIRATORY SENSITIZATION:**  
No data available.

#### REPEAT DOSE TOXICITY DATA

**SUBCHRONIC / CHRONIC TOXICITY:**  
Cloxacillin: In a rat intravenous study given 7000 mg/kg for 4-weeks caused changes in lung and liver weights and resulted in hypoglycemia.

**REPRODUCTIVE / DEVELOPMENTAL TOXICITY:**  
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**MUTAGENICITY / GENOTOXICITY:**  
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**CARCINOGENICITY:**  
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### SECTION 12. ECOLOGICAL INFORMATION

#### ECOTOXICITY DATA

**MSDS NAME:** Orbenin DC

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Page 4 of 5

There are no ecotoxicity data available for this product or its components.

#### ENVIRONMENTAL DATA

There are no environmental data available for this product or its components.

### SECTION 13. DISPOSAL CONSIDERATIONS

#### MATERIAL WASTE:

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#### PACKAGING AND CONTAINERS:

Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations.

### SECTION 14. TRANSPORT INFORMATION

This material is not subject to the transportation regulations of DOT, IATA, IMO, and the ADR.

### SECTION 15. REGULATORY INFORMATION

#### TSCA LISTING

INGREDIENT	TSCA
Peanut Oil	X

Substances not included in the table above are TSCA exempt or not regulated under TSCA.

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INGREDIENT	PARTK	MNRTK	MIRTK	RIRTK
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