SAFETY DATA SHEETS

This SDS packet was issued with item:

078342777

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

078930579



IN CASE OF EMERGENCY Emergency Phone: (614) 276-4000

Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Common/Trade Name: Digoxin Oral Solution

Chemical Name: 3β -[0-2,6-dideoxy- β -D-ribo-hexopyranosyl- $(1\rightarrow 4)$ -0-2, 6-dideoxy- β -D-ribo-hexopyranosyl- $(1\rightarrow 4)$ -2, 6-dideoxy- $(1\rightarrow 4)$ -2, 6-d

dideoxy-β-D-*ribo*-hexopyranosyl)oxy]-12β, 14-dihydroxy-5β-card-20(22)-enolide

Synonyms: None

Molecular Formula: C₄₁H₆₄O₁₄ Molecular Weight: 780.95 CAS No: 20830-75-5

Chemical Family: Cardiac glycosides

Product Use: Treatment of mild to moderate heart failure and chronic atrial fibrillation

Manufacturer's Name: Boehringer Ingelheim Roxane, Inc.

Address: 1809 Wilson Road Columbus, Ohio 43228

2. COMPOSITION / INFORMATION ON INGREDIENTS

| Composition | CAS# | Exposure Limit |
|-----------------------------|------------|---|
| Digoxin (active ingredient) | 20830-75-5 | None established |
| Alcohol, ethyl | 64-17-5 | ACGIH TLV-TWA: 1000 ppm OSHA Z-1 PEL: 1000 ppm |

REFER to PHYSICIAN'S DESK REFERENCE for common components present as <1%

3. HAZARDS IDENTIFICATION

| Emergency | Physical State: Liquid solution administered orally. |
|---------------------------|---|
| Overview | Colorless, lime flavored solution with 0.05 mg/mL active ingredient. |
| Overview | Coloniess, line navored soldtion with 0.03 mg/mL active ingredient. |
| | Odor: Slight |
| | |
| | WARNING! |
| | May be harmful if swallowed. |
| | Accidental ingestion of large amounts may be harmful. |
| Primary Route(s) | |
| of Entry | Ingestion |
| Potential Health Effects: | Inhalation: Not expected to be an inhalation hazard in final pharmaceutical form. |
| | Eye Contact: Not expected to be a hazard to the eye. Contact with eye may cause irritation, burning and redness. |
| | Skin Contact: Not expected to be a hazard to the skin. Can cause hypersensitive reactions resulting in rash, redness, itching and inflammation. |
| | Ingestion: May be harmful if ingested. Ingestion may cause nausea, vomiting, diarrhea, dizziness and weakness. |
| Toxicity Data: | See Section 11 |

| Effects of | The potentia | al for exposure is reduced in finished pharmaceutical form. | | |
|--|--|--|--|--|
| Overexposure: | Overexposure by ingestion may cause changes in vision, loss of appetite, ventricular fibrillation, heart block, renal impairment, and irregular heartbeat. | | | |
| Target Organs: | | | | |
| 4. FIRST AID MEAS | SURES | | | |
| Eye Exposure | | ial that contacts the eye should be washed out immediately with water. If easy to do, ontact lenses if worn. Get medical attention if symptoms persist. | | |
| Skin Exposure | Wash with | soap and water. Get medical attention if symptoms occur. | | |
| Ingestion | Call a phys | sician or poison control center immediately. | | |
| Inhalation | | t pose a hazard in the final form. If breathing is difficult, move to fresh air. Get tention immediately. | | |
| 5. FIRE AND EXPL | OSION HA | ZARDS | | |
| Flammability | | Lower: N/A Upper: N/A | | |
| Flash Point | | N/A | | |
| Extinguishing Media | | Use water spray, dry chemical, carbon dioxide, foam or material appropriate for fire in surrounding area | | |
| Special Fire Fighting Procedures | | Wear full protective clothing and self-contained breathing apparatus. Use water spray to keep fire-exposed containers cool. | | |
| Unusual Fire/Explosion Hazards | on | For significant quantities of product: Combustible. Prevent build-up of vapors or gases to explosive concentrations. | | |
| Hazardous Combusti Products | on | Carbon dioxide, carbon monoxide | | |
| 6. ACCIDENTAL R | ELEASE IN | IFORMATION | | |
| Use appropriate pers | onal protec | CANT QUANTITIES OF LIQUID IS SPILLED: tive equipment (see Section 8). Eliminate ignition sources. Wipe up and containerize ntainer. Dispose according to applicable regulations. Incineration of the waste at an ed. | | |
| 7. PRECAUTIONS | FOR SAFE | HANDLING AND USE | | |
| Precautions Handling Significant Quantities of Liquid: | Observe good industrial hygiene practices. | | | |
| Storage | Store at 15° to 30°C (59° to 86°F). Keep container closed tightly. Protect from light and moisture. Store away from foodstuffs. | | | |
| 8. CONTROL MEASU | JRES AND P | PERSONAL PROTECTIVE EQUIPMENT | | |
| Exposure Limits | S None | | | |
| Engineering Controls | Ventilation should be matched to conditions. | | | |
| Respiratory Protection | protection matched | Not required when handling liquid or containers. NIOSH/MSHA approved respirators for protection should be used if respirators are found to be necessary. Ventilation should be matched to conditions. | | |
| Personal Protection | | Not required when handling final product. If containers are compromised or exposure is likely wear: Goggles, Lab Coat, Gloves | | |
| | | Eye wash, washing facilities | | |
| Recommended Facilities | | h, washing facilities | | |

| Appearance | Colorless liquid solution | Melting point | Not available | Solubility in water | Soluble |
|------------|---------------------------|-------------------|---------------|---------------------|---------------|
| Odor | Slight | Boiling point | Not available | Specific Gravity | Not available |
| Taste | Lime | Vapor Pressure | Not available | Flashpoint | |
| рН | Not available | Density | Not available | Flammability Limits | Not available |

10. STABILITY AND REACTIVITY DATA

| Stability | Stable |
|-----------------------------|-----------------------|
| Incompatibility | None known |
| Hazardous Decomposition | Oxides of carbon |
| Conditions to Avoid | Excessive heat, light |
| Hazardous Polymerization | Will not occur. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Active Ingredient:

LD50 Oral (rat): 28.27 mg/kg LD50 Oral (mouse): 17.78 mg/kg

Carcinogenicity: Not listed as a carcinogen or potential carcinogen by NTP, IARC Monographs or OSHA.

12. ENVIRONMENTAL IMPACT INFORMATION

No information is currently available on the environmental impact of this product.

13. DISPOSAL INFORMATION

Waste Disposal Considerations: Dispose of material according to federal, state and local disposal regulations or company operating procedures. Disposal by incineration is recommended.

At home: Discard away from children's reach.

14. TRANSPORTATION INFORMATION

DOT: Limited Quantity of liquids and solids containing ethyl alcohol are exempt from provisions of 49CR by DOT granting Special Permit DOT-SP-9275

TDG: Not Regulated

IATA: : Limited Quantity of liquids and solids containing ethyl alcohol are exempt from provisions of 49CR by DOT granting Special Permit DOT-SP-9275

IMDG: Not Regulated

15. REGULATORY INFORMATION

DEA: Digoxin is not a controlled substance.

FDA: Digoxin is an approved prescription medication.

Inventory Status: This material is not listed on the US TSCA Inventory. Therefore, it can only be used for TSCA exempt purposes such as R&D or drug use.

This material is not listed on the DSL Inventory but is exempt.

16. OTHER DATA

ABBEVIATIONS:

N/A - not applicable

Prepared by: Boehringer Ingelheim Roxane, Inc.

References:

- 1. Digoxin Oral Solution, Package Insert, Boehringer Ingelheim Roxane, Inc., Columbus, Ohio
- 2. RTECS No. IH6125000 Digoxin

- 3. Ariel Webinsight. Regulatory and ChemExpert Database.
- 4. PDR Physicians Desk Reference

Date: 09/13/2008 - New MSDS

SEE CURRENT PACKAGE INSERT FOR FURTHER INFORMATION

The information provided is believed to be complete and accurate. If this product is combined with other materials, deteriorates or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the users' responsibility to use the information according to the application. Boehringer Ingelheim Roxane, Inc. assumes no responsibility or liability resulting from the use of this information.



IN CASE OF EMERGENCY Emergency Phone: (614) 276-4000

Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Common/Trade Name: Digoxin Oral Solution

Chemical Name: 3beta-[0-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-

4)-2,6-dideoxy-beta-d-ribo-hexopyranosyl]oxy)-12beta,14-dihydroxy-5beta-card-20(22)-enolide

Synonyms: None

Molecular Formula: C₄₁H₆₄O₁₄ Molecular Weight: 780.95 CAS No: 20830-75-5

Chemical Family: Cardiac glycosides

Product Use: Treatment of mild to moderate heart failure and chronic atrial fibrillation

Manufacturer's Name: Boehringer Ingelheim Roxane, Inc.

1809 Wilson Road Columbus, Ohio 43228

2. COMPOSITION / INFORMATION ON INGREDIENTS

| Composition | CAS# | Exposure Limit |
|-----------------------------|------------|--|
| Digoxin (active Ingredient) | 20830-75-5 | None established |
| Alcohol, ethyl (10 % v/v) | 64-17-5 | ACGIH TLV-TWA: 1000 ppm OSHA-Z-1 PEL:1000 PPM |

REFER to PHYSICIAN"S DESK REFERENCE for common components present as <1%

3. HAZARDS IDENTIFICATION

| Emergency | Physical State: Liquid solution administered orally |
|---------------------------|---|
| Overview | Colorless, lime flavored solution with 0.05 mg/mL active ingredient |
| | Odor: Slight WARNING! |
| | Accidental ingestion amounts may be harmful |
| Primary Route(s) | |
| of Entry | Ingestion |
| Potential Health Effects: | Inhalation: Not expected to be a hazard to the eye. Contact with the eye may cause irritation, burning, and redness. |
| | Skin Contact: Not expected to be a hazard to the skin. Can cause hypersensitive reactions resulting in rash, redness, itching and inflammation. |
| | Ingestion: May be harmful if ingested. Ingestion may cause nausea, vomiting, diarrhea, dizziness and weakness. |
| Toxicity Data: | See Section 11 |
| Effects of | The potential for exposure is reduced in finished pharmaceutical form. |
| Overexposure: | Overexposure by ingestion may cause changes in vision, loss of appetite, ventricular fibrillation, heart block, renal impairment and irregular heartbeat. |
| Target Organs: | Heart |
| 4. FIRST AID ME | ASURES |

| Eye Exposure | Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses if worn. Get medical attention if symptoms occur. |
|---------------|--|
| Skin Exposure | Wash with soap and water. Get medical attention if symptoms occur. |

| Ingestion | Call a physician or poison control center immediately. | | |
|--|--|---|--|
| Inhalation | Should not pose a hazard in the final form. If breathing is difficult, move to fresh air. Get medical attention immediately. | | |
| 5. FIRE AND EXPL | 5. FIRE AND EXPLOSION HAZARDS | | |
| Flammability | | Lower: N/A Upper: N/A | |
| Flash Point | | 134 degrees F closed cup | |
| Extinguishing Media | | Use water spray, dry chemical, carbon dioxide, foam or material appropriate for fire in surrounding area | |
| Special Fire Fighting Procedures | | Wear full protective clothing and self-contained breathing apparatus. Use water spray to keep fire-exposed containers cool. | |
| Unusual Fire/Explosi Hazards | on | For significant quantities of product: Combustible. Prevent build-up of vapors or gases to explosive concentrations. | |
| Hazardous Combusti Products | on | Carbon dioxide, carbon monoxide | |
| 6. ACCIDENTAL R | ELEASE IN | IFORMATION | |
| Use appropriate pers | onal protect | CANT QUANTITIES OF LIQUID IS SPILLED: tive equipment (see Section 8). Eliminate ignition sources. Wipe up and containerize ntainer. Dispose according to applicable regulations. Incineration the waste at an id. | |
| 7. PRECAUTIONS | FOR SAFE | HANDLING AND USE | |
| Precautions Handling Significant Quantities of broken tablets: | Observe | Observe good industrial hygiene practices. | |
| Storage | | Store at 15 to 30 degrees C(59 TO 86 degrees F). Keep container closed tightly. Protect from light and moisture. Store away from foodstuffs. | |
| 8. CONTROL MEASU | JRES AND P | PERSONAL PROTECTIVE EQUIPMENT | |
| Exposure Limits | NONE | | |
| Engineering Controls | | uire when handling liquid or containers. Good ventilation should be used. Ventilaion be matched to conditions. | |
| Respiratory Protection | Not requ | ired when handling liquid or containers. | |
| Personal Protection | | ired when handling final product. If containers are compromised or exposure is ear: Goggles, Lab Coat, Gloves | |
| Recommended Facilities | Eye was | h, washing facilities | |

| 9. PHYSICA | 9. PHYSICAL / CHEMICAL CHARACTERISTICS | | | | |
|------------|--|-------------------|---------------|---------------------|---------------|
| Appearance | Colorless liquid solution | Melting point | Not available | Solubility in water | Soluble |
| Odor | Slight | Boiling point | Not available | Specific Gravity | Not available |
| Taste | Lime | Vapor Pressure | Not available | Flashpoint | 134 degrees F |
| рН | Not available | Density | Not available | Flammability Limits | Not available |

10. STABILITY AND REACTIVITY DATA

| Stability | Stable |
|-----------------------------|-----------------------|
| Incompatibility | None known |
| Hazardous Decomposition | Oxides of Carbon |
| Conditions to Avoid | Excessive heat, light |
| Hazardous Polymerization | Will not occur |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Active Ingredient:

LD50 Oral (RAT): 28.27 mg/kg LD50 Oral (mouse): 17.78 mg/kg

Carcinogenicity: Not listed as a carcinogen or potential carcinogen by NTP, IARC Monographs or OSHA

12. ENVIRONMENTAL IMPACT INFORMATION

No information is currently available on the environmental impact of this product.

13. DISPOSAL INFORMATION

Waste Disposal Considerations: Dispose of material according to federal, state and local disposal regulations or company operating procedures. Disposal by incineration is recommended.

At home: Discard away from children's reach.

14. TRANSPORTATION INFORMATION

DOT: Consult 49CFR

IATA: Consult current version of IATA regulations

IMDG: Consult current version of IMO

15. REGULATORY INFORMATION

DEA: Digoxin is not a controlled substance

FDA: Digoxin is an approved prescription medication

Inventory Status: This material is not listed on the US TSCA Inventory. Therefore, it can only be used for TSCA exempt purposes such as R&D or drug use.

This material is not listed on the DSL Inventory but is exempt.

16. OTHER DATA

ABBEVIATIONS:

N/A - not applicable

Prepared by: Boehringer Ingelheim Roxane, Inc.

References:

- 1. Digoxin Oral Solution,, Package Insert, Boehringer Ingelheim Roxane, Inc., Columbus, Ohio
- 2. RTECS No. IH612500 Digoxin
- 3. Ariel Webinsight. Regulatory and ChemExpert Database.

4. PDR - Physicians Desk Reference

Date: Updated: 01/6/2014

SEE CURRENT PACKAGE INSERT FOR FURTHER INFORMATION

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