Safety Data Sheet
RIBAVIRIN CAPSULES USP

Strength: 200mg. **Pack Size:** 42, 56. 70, 84, 140, 168, 180 & 1000 Capsules per bottle **Revision No.:** 02
Blister cartons of 100 (10 x 10) unit-dose capsules

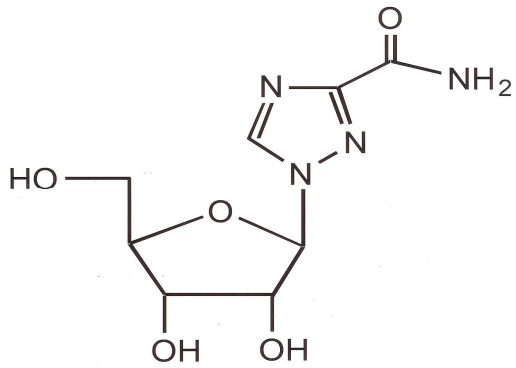
EMERGENCY OVERVIEW

Each Ribavirin Capsules, USP intended for oral administration contains Ribavirin and excipients generally considered to be non- toxic and non-hazardous in small quantities and under conditions of normal occupational exposure.

Section 1. Identification

Identification of the product

Product name:	Ribaverin Capsules USP
Formula:	$C_8H_{12}N_4O_5$
Chemical Name:	1-ß-D-ribofuranosyl- 1 H-1,2,4-triazole-3-carboxamide



Manufacturer / supplier identification

Company:	**Cadila Healthcare Ltd. Ahmedabad, India**
Address:	Sarkhej – Bavla. N.H. 8A, Moraiya. Tal. Sanand. Dist. Ahmedabad – 382210. State: Gujarat. India
Contact for information:	Tel.: +91 79 6868100 Fax: +91 79 3750319
Emergency Telephone No.	Tel.: +91 79 6868100
Recommended use / Therapeutic Category	A nucleoside analogue with antiviral activity.
Restriction on Use / Contraindications	Combination ribavirin capsules/INTRON A therapy is contraindicated in females who are pregnant and in the male partners of females who are pregnant. Extreme care must be

taken to avoid pregnancy during therapy and for 6 months after completion of treatment in female patients, and in female partners of male patients who are taking combination ribavirin capsules/INTRON A therapy

Ribavirin capsules monotherapy is not effective for the treatment of chronic hepatitis C and should not be used for this indication.

Petient persistently severe or worsening signs or sympoms of these conditions should be withdrawn from therapy. In many but not all cases these disorders resolve after stopping INTRON A therapy.

Section 2. Hazard(s) Information

Dose and Administration

INTRON A Injection should be administered subcutaneously and ribavirin capsules should be administered orally. Ribavirin capsules may be administered without regard to food, but should be administered in a consistent manner

Body Weight	Ribavirin Capsules	INTRON A Injection
=75 kg	2 times 200 mg capsules AM, 3 times 200 mg capsules PM daily p.o.	3 million IU 3 times weekly s.c.
>75 kg	3 times 200 mg capsules AM, 3 times 200 mg capsules PM daily p.o.	3 million IU 3 times weekly s.c.

Adverse Effects

The primary toxicity of ribavirin is hemolytic anemia. Reductions in hemoglobin levels occurred within the first 1 to 2 weeks of oral therapy.

Cardiac and pulmonary events associated with anemia occurred in approximately 10% of patients.

Ribavirin capsules/INTRON A Combination Therapy:
In general, the selected treatment-emergent adverse events were are as under:

General Disorders
Headache, Fatigue, Rigors, Fever, Influenza-like symptoms ,Asthenia, Chest pain.

Central & Peripheral Nervous System Disorders
Dizziness

Gastrointestinal System Disorders
Nausea, Anorexia, Dyspepsia, Vomiting.

Musculoskeletal System Disorders
Myalgia, Arthralgia, Musculoskeletal pain,

Psychiatric Disorders
Insomnia, Irritability, Depression, Emotional lability, Concentration impaired, Nervousness,

Respiratory System Disorders
Dyspnea,Sinusitis,

Skin & Appendages Disorders
Alopecia, Rash,Pruritus,Special Senses,

Other Disorders
In addition, the following spontaneous adverse events have been reported during the marketing surveillance of ribavirin capsules/INTRON A therapy: hearing disorder and vertigo.

Over Dose Effect

There is limited experience with overdosage. Acute ingestion of up to 20 grams of ribavirin capsules, up to 10 times the recommended doses have been reported.

Medical Conditions

Birth defects and fetal death with ribavirin: Patients must have a negative pregnancy test prior to therapy; use at least 2 forms of contraception and undergo monthly pregnancy tests.
Patients exhibiting the following conditions should be closely monitored and may require dose reduction or discontinuation of therapy:

- Monotherapy with ribavirin is not permitted.
- Hemolytic anemia may occur with a significant initial drop in hemoglobin.
- Pancreatitis.
- Pulmonary infiltrates or pulmonary function impairment.
- New or worsening ophthalmologic disorders
- Severe decreases in neutrophil and platelet counts, and hematologic, endocrine (e.g., TSH), and hepatic abnormalities.
- Dental/periodontal disorders reported with combination therapy.
- Weight loss and growth inhibition reported during combination therapy in pediatric patients. Long-term growth inhibition (height) reported in some patients.

Contraindications

Combination ribavirin capsules/INTRON A therapy is contraindicated in females who are pregnant and in the male partners of females who are pregnant. Extreme care must be taken to avoid pregnancy during therapy and for 6 months after completion of treatment in female patients, and in female partners of male patients who are taking combination ribavirin capsules/INTRON A therapy

Ribavirin capsules monotherapy is not effective for the treatment of chronic hepatitis C and should not be used for this indication.

Patients with persistently severe or worsening signs or symptoms of these conditions should be withdrawn from therapy. In many but not all cases these disorders resolve after stopping INTRON A therapy.

Pregnancy Comments Ribavirin produced significant embryocidal and/or teratogenic effects in all animal species in which adequate studies have been conducted. Malformations of the skull, palate, eye, jaw, limbs, skeleton, and gastrointestinal tract were noted. The incidence and severity of teratogenic effects increased with escalation of the drug dose. Survival of fetuses and offspring was reduced.

Pregnancy Category X

Section 3. Composition / information on ingredients

Component	Exposure Limit	CAS No.
Principle Component :		
Ribavirin	Not Found	36791-04-5
Inactive Ingredients :		
crospovidone	Not Found	9003-39-8
magnesium stearate	Not Found	557-04-0
microcrystalline cellulose	Not Found	9004-34-6
povidone	Not Found	9003-39-8
silicon dioxide	Not Found	7621-86-9
Capsule Shell		
Gelatin	Not Found	9000--70-8
Titanium dioxide.	Not Found	13463-67-7

Section 4. First - aid measures

General Remove from exposure. Remove contaminated Clothing. Person developing serious hypersensitivity reaction must receive medical attention

Overdose Treatment There is no specific antidote for INTRON A or ribavirin capsules, and hemodialysis and peritoneal dialysis are not effective treatment of overdose of either agent.

Section 5. Fire - fighting measures

Flash point	Not Found	**Upper Flammable Limit:**	Not Found
Auto-Ignition Temperature:	Not Found	**Lower Flammable Limit:**	Not Found

Extinguishing Media	Water Spray, dry chemical, carbon dioxide or foam as appropriate for surrounding fire and material.	**Fire and Explosion Hazard**	This material is assumed to be combustible. As with all dry powders it is advisable to ground mechanical equipment in contact with the dry material to dissipate the potential build-up of static electricity.

Fire Fighting Procedure As with all fires, evacuate personnel to a safe area. Fire fighter should use self- contained breathing equipment and protective clothing.

Section 6. Accidental Release Measures

Spill Response Wear approved respiratory protection, chemically compatible gloves and protective clothing. Wipe up spillage or collect spillage using high efficiency vacuum cleaner. Avoid breathing dust. Place spillage in appropriately labelled container for disposal. Wash spill site.

Section 7. Handling and Storage

Storage Store at 25°C (77°F); excursions permitted to 15°C - 30°C (59° - 86°F). Keep bottle tightly closed.

Incompatibilities: No data available.

Section 8. Exposure controls / personal protection

Respiratory Protection Protection from inhalation is not normally necessary. If ventilation is inadequate or dust is likely to generate, use of suitable dust mask would be appropriate.

Skin Protection Skin protection is not normally necessary, however it is good practice to avoid contact with chemical to use suitable gloves when handling.

Eye protection Eye protection is not normally necessary. If concerned wear protective goggles or glasses. Wash hands prior to touching eye and in particular handling contact lenses.

Protective Clothing Protective clothing is not normally necessary, however it is good practice to use apron.

Engineering Control Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Section 9. Physical and chemical properties

Appearance	Ribavirin capsules USP, 200 mg are white to off-white granular powder filled in size '0' hard gelatin capsules with white colored cap printed with "ZA-12" in black ink and white colored body printed with "200mg" in black ink.		
Solubility in water	No Data Available	**Odour**	Odourless
Boiling point	No Data Available	**Melting Point**	No Data Available
Evaporation rate	No Data Available	**Vapour density**	No Data Available
Reactivity in water	No Data Available	**Evaporation rate**	No Data Available
% Volatile by volume	No Data Available	**Specific gravity**	No Data Available
		Vapour pressure	No Data Available
Other information	The molecular formula of Ribavirin is $C_8H_{12}N_4O_5$ and the molecular weight is 244.2. Ribavirin is a white crystalline powder. It is freely soluble in water and slightly soluble in anhydrous alcohol.		

Section 10. Stability and Reactivity

Condition to avoid	Avoid exposure to extreme heat, light and moisture.	**Stable**	Stable under normal ambient and anticipated storage and handling conditions.
Decomposition Products	No Data Available	**Hazardous Reaction**	No data available.
Incompatibilities:	No Data available.		

Section 11. Toxicological information

General	Handling of formulated product is not expected to cause any toxicological affects. The data pertains to the ingredient in formulations, rather than this specie formulation.
Target organ	Eye contact, Skin contact and inhalation is not great risk as this product is capsules.
Other	Long-term studies in the mouse and rat (18 to 24 months; doses of 20 to 75 and 10 to 40mg/kg/day, respectively [estimated human equivalent doses of 1.67 to 6.25 and 1.43 to 5.71 mg/kg/day, respectively, based on body surface area adjustment for a 60 kg adult; approximately 0.1 to 0.4 times the maximum human 24-hour dose of ribavirin]) have demonstrated a relationship between chronic ribavirin exposure and increased incidences of vascular lesions (microscopic hemorrhages) in mice. In rats, retinal degeneration occurred in controls, but the incidence was increased in ribavirin-treated rats.

Section 12. Ecological information

Do not allow product to enter drinking water supplies, waste water or soil

Section 13. Disposal Consideration

Dispose the waste in accordance with all applicable Federal, State and local laws.

Section 14. Transport Information

The product is not hazardous when shipping via air (IATA), ground (DOT), or sea (IMDG).

Section 15. Regulatory Information

Generic Medicine. Approved by USFDA & the ANDA Number is 077224

Section 16. Other information

None

Date of issue: 28/05/2015 **Supersedes edition of:** 01

The information contained herein is based on the state of our knowledge. It Characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.