SUMMARY OF THE PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT

Hepatitis-B Vaccine (rDNA) (Paediatric) - Single Dose / 10 doses

2. QUALITATIVE AND QUANTATIVE COMPOSITION

Each dose of 0.5 ml contains	
Purified Hepatitis B Surface Antigen	10 mcg
Adsorbed on Aluminum Hydroxide (Al^{+++})	0.25 mg to 0.40 mg
Preservative: Thiomersal	0.005 %
Produced in *Hansenula polymorpha* (yeast)	

3. PHARMACEUTICAL FORM

Suspension for injection

4. CLINICAL PARTICULARS

4.1 Therapeutic indication

Hepatitis-B vaccine is indicated for active immunization against Hepatitis B infection in subjects considered at risk of exposure to HBV-positive material

In areas of low prevalence of hepatitis B, immunization with hepatitis B vaccine is recommended for neonates/infants and adolescents as well as for subjects who are, or will be, at increased risk of infection such as:

- Health Care Personnel.
- Patients receiving frequent blood products.
- Personnel and residents of institution.
- Persons at increased risk due to their sexual behaviour.
- Illicit users of addictive injectable drugs.
- Travellers to areas with a high endemicity of HBV.
- Infants born of mothers who are HBV carries.
- Persons originating from areas with a high endemicity of HBV.
- Others: Police personnel, fire brigade personnel, armed forces personnel and anybody who through their work or personal lifestyle may be exposed to HBV.
- Household contacts of any of the above groups and of patients with acute or chronic HBV infection.

In areas of intermediate or high prevalence of hepatitis B, with most of the population at risk of acquiring the disease, immunization should be offered to all neonates and young children. Immunization should also be considered for adolescents and young adults.

4.2 Posology and method of administration

Dose - 10 mcg dose (in 0.5 ml suspension)] is recommended for neonates, infants, children and adolescents upto 19 years of age

IMMUNIZATION SCHEDULE:

Primary immunization: A series of three intramuscular injections is required to achieve optimal protection.

The following immunisation schedules can be recommended:

- 6, 10, 14 weeks for infants
- 0,1,6 months
- 0,1,2 months (rapid schedule)

The immunization schedule should be adapted to meet local immunization recommendations.

BOOSTER DOSE
The need for the booster dose in healthy individuals who have received the full primary immunization is not recommended. It would seem advisiable to recommend a booster dose when Anti-HBs antibody titres fall below 10IU/L for all people at the risk and especially for patients who are immunocompromised (HIV infected patients) or those on haemodialysis.

SPECIAL DOSAGE RECOMMENDATIONS :
DOSAGE RECOMMENDATIONS FOR NEONATES BORN OF MOTHERS WHO ARE HBV CARRIERS.
The 0, 1, 2-month immunization schedule is recommended and should start at birth. Concomitant administration of Hepatitis B immunoglobulin is not necessary, but when Hepatitis B immunoglobulin is given simultaneously with Hepatitis-B vaccine, a separate injection site must be chosen.
DOSAGE RECOMMENDATION FOR KNOWN OR PRESUMED EXPOSURE OF HBV
In circumstances where exposure to HBV has recently occurred (eg needlestick with contaminated needle), the first dose of Hepatitis-B vaccine can be administered simultaneously with Hepatitis B immunoglobulin which however must be given at a separate injection site. The rapid immunization schedule should be advised.
DOSAGE RECOMMENDATION FOR IMMUNOCOMPROMISED PERSONS:
The primary immunization schedule for chronic haemodialysis patients or persons who have an impaired immune system is four doses of 40 mcg at 0, 1, 2 and 6 months from the date of first dose. The immunization schedule should be adapted in order to ensure that the anti-HBs antibody titre remains above the accepted protective level of 10 IU/L

Method of Administration - Hepatitis-B vaccine should be injected intramuscularly in the deltoid region in adults. The vaccine may be administered subcutaneously in patients with thrombocytopenia or bleeding disorders. The vaccine should be well shaken before use. Only sterile needle and syringes should be used for each injection.

4.3 Contraindication

Hepatitis-B vaccine should not be administered to subjects with known hypersensitivity to any component of the vaccine, or to subjects having shown signs of hypersensitivity after previous Hepatitis B vaccine administration.

4.4 Special Warning and Precaution

Because of the period of latency of hepatitis B infection it is possible for unrecognized infection to be present at the time of immunization. The vaccine may not prevent hepatitis B infection in such cases.

The vaccine will not prevent infection caused by other agents such as hepatitis A, hepatitis C and hepatitis E and other pathogens known to infect the liver.

The immune response to Hepatitis B vaccine is related to age. In general, people over 40 years of age respond less well.

In haemodialysis patients and persons with an impaired immune system, adequate anti-HBs antibody titres may not be obtained after the primary immunization course and such patients may therefore require administration of additional doses of vaccine (see Dosage recommendation for immunocompromised persons).

As with all injectable vaccines, appropriate medication (eg adrenaline) should always be readily available for treatment in case of rare anaphylactic reactions following the administration of the vaccine

Hepatitis-B vaccine should not be administered in the gluteal muscle or intradermally since this may result in a lower immune response

Hepatitis-B vaccine may be used to complete a primary immunization course started either with plasma derived or with other genetically engineered hepatitis B vaccines, or as a booster dose in subjects who have previously received a primary immunization course with plasma derived or with other genetically engineered hepatitis B vaccines.

4.5 Interaction With other Medicinal Products, Other Interactions

The vaccine can be safely and effectively given simultaneously but at different injection site with DTP, DT, TT, BCG, Measles, Polio vaccine (OPV and IPV), yellow fever vaccine and vitamin A supplementation. It should not be mixed in the vial or syringe with any other vaccine unless it is manufactured as a combined product (e.g. DTP-HepB).

4.6 Pregnancy and Lactation

Adequate human and animal data on use during pregnancy and lactation is not available

4.7 Effects On Ability To Drive And Use Machines

It has no or negligible influence on the ability to drive and use machines.

4.8 Adverse Reactions

The undesirable events are temporally related to the administration of Hepatitis B vaccine. They are usually mild and confined to the first few days of vaccination. The most common reactions are mild soreness, erythema, induration, fatigue, fever, malaise, influenza-like symptoms.
Less common systemic reactions include nausea, vomiting, diarrhoea, abdominal pain, abnormal liver function tests, arthralgia, myalgia, rash, pruritus, urticaria, liver function.

4.9 Overdose

No case of overdose has been reported.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic Properties

Pharmacotherapeutic group: Viral Vaccine ATC code: J07BC01.
Hepatitis-B vaccine (recombinant) stimulates active immunity to hepatitis-B virus (HBV) infection. Hepatitis B surface antigen (HBsAg), which is present in hepatitis-B vaccine (recombinant), promotes the production of antibody to HBsAg (anti-HBs); anti-HBs neutralizes the HBV so that its infective or pathogenic properties are inhibited.
Administration of hepatitis B vaccine (recombinant) during the incubation period of infection (i.e. after exposure to hepatitis B virus but prior to onset of clinical symptoms) may only modify or ameliorate, rather than prevent infection.
The active immune response produced by hepatitis B vaccine (recombinant) does not appear to be suppressed by hepatitis B immune globulin (HBIG) when HBIG is administered concomitantly at separate sites.

Immunological Data:
Various clinical trials performed to assess Immunogenicity and reactogenicity of the vaccine proved that the vaccine is immunogenic. In various populations, following Hepatitis B vaccination, the seroprotection ranges from 95.6 - 100% in adults, 81.81 – 90.74% in adults with CRF, 100% in children and adolescents, and 94.36 - 100% in infants.

5.2 Pharmacokinetics Properties

Pharmacokinetic studies are not required for vaccines.

5.3 Preclinical Safety Data

Single- and repeated-dose toxicity studies of Hepatitis B vaccine have been done in Swiss albino mice and Wistar rats by intramuscular administration. The vaccine in single- and

repeated-dose toxicity studies in both the species had no effects on their general health. There were no changes in body temperature, cumulative net body weight gains and hematological, clinical chemistry and urinalysis parameters in animals of either sex. No gross or microscopic histopathological changes were detected. Preclinical data reveals no special hazard for humans based on general safety studies.

6.0 PHARMACEUTICAL PROPERTIES

6.1 List of Excipients

Aluminium Hydroxide gel; Thiomersal; Phosphate Buffer Saline (10mM) (Disodium Hydrogen Phosphate Anhydrous, Sodium dihydrogen Phosphate dihydrate, Sodium chloride)

6.2 Incompatibilities

In the absence of compatibility studies, this medicinal product must not be mixed with other medicinal products.

6.3 Shelf Life

36 months from date of manufacture

6.4 Special Precautions for storage

Hepatitis -B vaccine should be stored at +2°C to +8°C. Do not Freeze. Discard if vaccine has been frozen.

6.5 Nature and Contents of Packaging

Presentation	Pack Size
Single dose Ampoule	**For Paediatric dose(0.5ml/1dose ampoule) :** 0.5 ml of suspension filled in a 1ml type I clear, tubular colourless glass ampoule with white colour OPC dot of .65 mm height, Base to constriction Height 28 mm, and Body Diameter 10.25 mm,10 ampoules in blister pack.10 x 5 = **50 ampoules per box.**
Single dose Vial (2ml)	**2ml Vial**: Hepatitis B vaccine (rDNA) (Paediatric) single dose in vial is filled in clear tubular vial type I glass vial with 30 mm height and 16.5 mm body diameter. Vials are closed with a 13 mm grey color bromo-butyl rubber stopper. The closure is sealed to the container using a 13 mm aluminium seal having 300 Pantone (Blue) colored flip-off cap **Box of 50 Vial**

Single dose Vial (4ml)	**4ml Vial**: Hepatitis B vaccine (rDNA) (Paediatric) single dose in vial is filled in clear tubular vial type I glass vial with 40 mm height and 16.5 mm body diameter. Vials are closed with a 13 mm grey color bromo-butyl rubber stopper. The closure is sealed to the container using a 13 mm aluminium seal having 300 Pantone (Blue) colored flip-off cap **Box of 50 Vial**
5 ml/ 10 doses - Vial	Hepatitis-B vaccine (rDNA) (Paediatric) 10 doses (vial) are filled in clear tubular vial type I glass vial with 52 mm height and 16.5 mm body diameter. Vials are closed with a 13 mm grey color bromo-butyl rubber stopper. The closure is sealed to the container using a 13mm aluminium seal having PMS Blue colored flip-off cap. **Box of 50 Vial**

6.6 Instructions regarding the preparation of medicinal products for its use and handling

The vaccine should be well shaken before use. Only sterile needle and syringes should be used for each injection. Once opened, multi-dose vials should be kept between +2ºC and +8ºC. Multi-dose vials of Hepatitis B from which one or more doses of vaccine have been removed during an immunisation session may be used in subsequent immunisation sessions for upto a maximum of 28 days, provided that all of the following conditions are met (as described in the WHO policy statement: Handling of multi dose vaccine vials after opening, WHO/IVB/14.07):

- The vaccine is currently prequalified by WHO;
- The vaccine is approved for use for up to 28 days after opening the vial, as determined by WHO;
- The expiry date of the vaccine has not passed;
- The vaccine vial has been, and will continue to be, stored at WHO- or manufacturer recommended temperatures; furthermore, the vaccine vial monitor, if one is attached, is visible on the vaccine label and is not past its discard point, and the vaccine has not been damaged by freezing.

1.7 MARKETING AUTHORISATION HOLDER

SERUM INSTITUTE OF INDIA PVT LTD
212/2, HADAPSAR, PUNE-411028. INDIA.

1.8 NUMBER IN THE REGISTER OF MEDICINAL PRODUCTS

SI/IND/004

1.9 DATE OF AUTHORISATION OR LAST RENEWAL OF AUTHORISATION

Date of first authorization: August 2005

Date of latest renewal: 24th July 2021

1.10 DATE OF REVISION OF TEXT

July 2023