1. NAME OF THE MEDICINAL PRODUCT

Measles vaccine (live) I.P., powder and solvent for solution for injection

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Measles vaccine powder and solvent for solution for injection contains a freeze-dried powder and a solvent for reconstitution (Sterile water for injection). Each dose of 0.5 ml contains not less than 1000 CCID₅₀ (cell culture infectious doses) of live attenuated Edmonston-Zagreb measles virus propagated on human diploid cells. Measles vaccine is in the form of a lyophilised cake.

For excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Powder and solvent for solution for injection

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

Measles vaccine is indicated for immunisation of all susceptible children against measles. It is recommended to be given to children at 9 months of age or as soon as thereafter, to protect against measles in early life. The vaccine is also recommended for use in children, adolescents, and adults with or without evidence of vaccination or measles infection. Immunisation against measles is particularly important for institutionalized children and for children who may be malnourished or subject to chronic diseases such as heart disease, cystic fibrosis, asthma, tuberculosis or other chronic pulmonary disorders.

4.2 Posology and method of administration

The vaccine should be reconstituted only with the entire diluent supplied (Sterile water for injection) using a sterile syringe and needle. With gentle shaking the dried cake is easily dissolved. After reconstitution the vaccine should be used immediately.

A single dose of 0.5 ml should be administered by deep subcutaneous injection into the anterolateral aspect of upper thigh in infants and toddlers and upper arm in older children. If the vaccine is not used immediately then it should be stored in the dark at 2-8°C for no longer than 6 hours.
Any opened container remaining at the end of a session (within six hours of reconstitution) should be discarded. The vaccine vial monitor, if present would have been removed on reconstitution. The diluent supplied is specially designed for use with the vaccine. Only this diluent must be used to reconstitute the vaccine. Do not use diluents from other types of vaccine or for MMR vaccine from other manufacturers. Using an incorrect diluent may result in damage to the vaccine and/or serious reactions to those receiving the vaccine. Diluent must not be frozen but should be kept cool.

CLOSE ATTENTION SHOULD BE PAID TO THE CONTRAINDICATIONS LISTED.

The diluent and reconstituted vaccine should be inspected visually for any foreign particulate matter and/or variation of physical aspects prior to administration. In the event of either being observed, discard the diluent or reconstituted vaccine.

4.3 Contraindications

- Hypersensitivity to the active substance(s) or to any of the excipients
- Pregnancy
- Acute severe infectious diseases, leukaemia, severe anemia and other severe diseases of the blood system, severe impairment of renal function decompensated heart disease,
- Within three months following administration of gammaglobulin or blood transfusions.
- Within six months following exchange transfusion.
- States of reduced immunity, either congenital or therapeutically acquired through irradiation and use of corticosteroid or cytostatic drugs
- States of reduced immunity following transplantation of organ
- Diseases and disorders of the central nervous system

4.4 Special warnings and special precautions for use

- Individuals receiving corticosteroids, other immuno-suppressive drugs or undergoing radio-therapy may not develop an optimal immune response.
• As with all injectable vaccines, appropriate medical treatment should always be readily available in case of rare anaphylactic reactions following the administration of the vaccine.
• The reaction to a tuberculin test may be suppressed between 4 to 6 weeks after measles vaccination.
• It is particularly important to immunize children suffering from malnutrition.
• Low-grade fever, mild respiratory infections or diarrhoea, and other minor illness should not be considered as contraindications to immunisation.

4.5 Interaction with other medicinal products and other forms of interaction
Except in the case of corticosteroids, other immunosuppressive drugs or radiotherapy, gammaglobulin or blood transfusion (see 4.3 Contraindications) no clinical interaction with other treatments or biological products has been documented.
Although data on concomitant administration of measles vaccine and other vaccines are not available, it is generally accepted that Measles vaccine may be administered at the same time as DPT, DT, TT, BCG and polio vaccine (OPV and IPV), Hepatitis-B, Haemophilus influenzae type b and yellow fever vaccine. Concomitant vaccines should be given by separate injections.
This vaccine can be administered as a booster dose in subjects who have previously received any other measles vaccine.

4.6 Pregnancy and lactation
Measles vaccine is contraindicated (see 4.3) in pregnancy. No studies on the effects on lactation have been performed.

4.7 Effects on ability to drive and use machines
No studies on the effects on the ability to drive and use machines have been performed.

4.8 Undesirable effects
Some mild reactions may occur such as marginal temperature rise in 5% to 6% of the vaccinated children, mild rash in 1% to 2% children, occasionally mild rash and slight gastric disorders or short-lived rhinopharyngitis. Fever or rash, or
both, generally appear between the 5th and the 12th day after vaccination and last for one to two days.

Anaphylactic reactions are also rare. In susceptible individuals the vaccine may very rarely cause allergic reactions like urticaria, pruritis and allergic rash within 24 hours of vaccination.

4.9 Overdose

No case of overdose has been reported.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Viral vaccine, ATC code: J07BD01

The effectiveness of the measles vaccine has been based on the induction of specific humoral antibodies against measles virus. Seroconversion rate or at least two-fold increase in the antibody concentration due to vaccination is used as the criteria for protection.

In clinical trials, 86% to 98.40% of healthy infants and children given a single dose of the vaccine demonstrated seroconversion for the measles. In a comparative trial this vaccine has shown significantly higher seroconversion rates and geometric mean titres of anti measles antibodies compared to Schwarz Measles Vaccine and Edmonston-Zagreb Measles Vaccine of Institute of Immunization, Zagreb.

A retrospective survey of 15 years in an Infectious Disease Hospital showed that the hospital admission due to measles decreased by 69% and the case fatality declined by 90%, after introduction of the vaccine.

In India, where only this measles vaccine has been in use since 1985-86, the number of measles cases declined by 51% from 1990 to 2003 despite of decreasing immunization coverage.

5.2 Pharmacokinetic properties

Pharmacokinetic studies are not required for vaccines.
5.3 Preclinical safety data

No formal animal testing has been carried out for non-clinical assessment. As part of the quality control every batch of the vaccine is tested in mice and guinea pigs for general safety and innocuity. However, toxicity studies were conducted with MMR vaccine which contained same strain and titer of measles virus as in monovalent measles virus vaccine. Single dose toxicity studies were conducted in mice and Beagle dogs with MMR vaccine live attenuated (Freeze-dried) by subcutaneous route. No toxicological effects were observed in mice and Beagle dogs after a single subcutaneous administration of MMR vaccine. The approximate lethal dose of MMR vaccine live attenuated (Freeze dried) was more than 80 times and 6.3 times the expected clinical dose, respectively.

In a repeated dose toxicity study in mice with MMR vaccine live attenuated (Freeze dried) by subcutaneous route no treatment related toxic effects were observed. There were no significant macroscopic and histopathological findings. The approximate lethal dose of MMR vaccine live attenuated (Freeze-dried) was more than 80 times the expected clinical dose in mice,

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Gelatin, sorbitol, histidine, alanine, tricine, arginine, lactalbumin hydrolysate

6.2 Incompatibilities

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

6.3 Shelf life

2 years

6.4 Special precautions for storage

Store and transport refrigerated at 2°C – 8°C.

Protect both the lyophilised and reconstituted vaccine from light.
For long term storage, it is recommended to store the lyophilised vaccine in the freezer at -20°C. The diluent should not be frozen, but kept cool.

6.5 **Nature and contents of container**

Lyophilised measles vaccine is a yellowish-white dry cake in vials (Type I glass).

1 Dose vial plus diluent (0.5 ml.)
2 Dose vial plus diluent (1 ml.)
5 Dose vial plus diluent (2.5 ml.)
10 Dose vial plus diluent (5 ml.)

6.6 **Special precautions for disposal**

If the vaccine is not used immediately then it should be stored in the dark at 2°C – 8°C for no longer than 6 hours.

Any unused product or waste material should be disposed of in accordance with local requirements.

7. **MARKETING AUTHORISATION HOLDER**

SERUM INSTITUTE OF INDIA LIMITED,
212/2, Hadapsar Off Soli Poonawalla Road,
Pune-411 028,
Maharashtra, INDIA.

8. **MARKETING AUTHORISATION NUMBER(S)**

Drug Mfg. Lic. No. 10 (in Form 28-D), Renewal in Form 26-H.

9. **DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

Date of First Authorisation: 21.03.1990
Date of Renewal of the Authorisation: 13.08.2012