

P-Sol

Phosphate solubilizing liquid biofertiliser



Large amounts of phosphate fertilizers are used on a regular basis, but a large portion of applied phosphorus is quickly converted to the insoluble form and only about 20-25% of applied phosphorus is useful. A greater part of soil phosphorus is present in an insoluble form and hence is unavailable to the plant. Phosphate solubilizing microorganisms are capable of solubilizing Ca, Al, Fe phosphates as well as rock phosphates and mineralizing organic phosphorus, making the phosphorus present in the soil available to the crop. [↑ 15%]

- Phosphorus is one of the major plant nutrients dominant in alkaline soils a greater part of soil phosphorus (95-99%) is present in an insoluble form and hence is unavailable to the plant.
- Phosphate solubilizing microorganisms are capable of solubilizing Ca, Al, Fe Phosphates as well as rock phosphates and mineralizing organic phosphorus, making the phosphorus present in the soil available to the crop. (↑ - 15%)
- The bound form of phosphate is made available to the crop by certain bacteria and fungi which solubilize phosphate.
- To increase the availability of phosphorus, large amounts of phosphate fertilizers are used on a regular basis , but after application , a large portion of the phosphorus is quickly converted to the insoluble form and only about 20-25% of the applied phosphorus is useful
- Phosphate solubilizing microorganisms play an important role in supplementing phosphorus to the plant, allowing the sustainable use of phosphate fertilizer and hence increasing crop yield.
- Environmental stresses are one of the most limiting factors in agricultural productivity.
- Suitable for : All crops – It can provide protection against drought and some soil borne diseases.
- Best result are obtained when applied with well decomposed organic manure
- P-Sol Produces organic acids like gluconic acid, succinic acid, mallic acid & others which are responsible for the breakdown of Ca – Phosphate bonds which release the phosphate ion.

Dosage :

For soil application : 1 Liter of PSB to be mixed with 1 ton of FYM & applied in 1 acre of land.

Seed treatment : 5 ml to 7 ml of PSB per kg of seeds

Seeding dipping : Mix 50 ml – 70 ml of PSB in 15 Liters of water & dip the seedling for 10 minutes before transplanting

Tree treatment : Dilute PSB @ 200ml/acre

Storage : keep in cool place and away from sunlight.

Application Guideline :

Shake the bottle well before use. Do not mix with other agrochemicals and fertilizers; leave minimum 3 to 5 days for scheduling the application.

Advantages :

- By the hydrolytic activities of these organic acids, the insoluble phosphorus in the soil is rendered soluble.
- Fortifies the soil with bacterial metabolites.
- These organisms play a major role in the solubilization and uptake of native and applied phosphorus.
- These Organisms acids (Citric acid, Oxalic acid, Succinic acid, tartaric acid, malic acid) increase the availability of phosphorus in the rhizosphere.
- P-Sol therefore not only helps show a reduction in phosphorus resources, but also helps to reduce environmental pollution which results from the chemical residues.
- Replaces chemical phosphorus by 25% in addition to stimulating plant growth.

Certificate of Analysis

P-SOL

Phosphate Solubilizing Liquid Biofertilizer

Batch No. : 3029
Date of analysis : 01/08/2014
Mfg. Date : 01/08/2014
Expiry Date : 01/08/2015

Sr. No.	Characteristic	Requirement	Results Obtained
1	Color	Off White	Complies
2	pH	6.6	Complies
3	Physical nature	Liquid	Complies
4	Count	1×10^8 Cell/ml	Complies

Remark: The above product complies as per specification.

For Nico Orgo Manures

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Quality Control Dept.

Partner

Microbiologist

Material Safety Data Sheet

NICO ORGO MANURES

***** 1. Chemical Products and Company Identification *****

Product Name : P Sol

Produce Code : Bacillus megaterium 1 x 10⁸ cell/ml

Bacillus coagulans 1 x 10⁸ cell/ml

Chemical Formula : Mixture

Other Designations : Liquid Formulation Containing Agriculturally
beneficial microorganisms.

Company :

NICO ORGO MANURES

Opp. Railway Station,

Dakor – 388 225.

(Gujarat – India)

Phone : +91-2699-244403, 244611

Fax : +91-2699-244903

***** 2. Composition / Information on Ingredients *****

No Hazardous Ingredients.

Contains naturally-occurring, non-pathogenic, microorganisms in liquid formulation. This includes Bacillus megaterium popularly used in agriculture for phosphate solubilizing. See Product label for method of application, dosage and recommendations. Not for food, feed or drug use.

***** 3. Hazards Identification *****

Emergency Overview : No known health hazards

Primary Entry Routes : Oral (swallowing), Inhalation

Acute Effects (Signs and Symptoms of Overexposure) :

Eyes : Liquid may cause mechanical irritation of eyes
Skin : No known hazard
Inhalation : Inhalation of large amounts may cause discomfort
Ingestion : No known hazard

Chronic Effects : No known hazard

Medical Conditions Aggravated by Exposure : None known

Target Organs : None

Carcinogenicity : None

HMIS : Health – 0, Flammability – 0, Reactivity – 0

***** **4. First Aid Measures** *****

Eyes : Flush with water for at least 15 minutes. Get medical attention if irritation persists.
Skin : Wash with soap and water
Inhalation : Remove person to fresh air. Get medical attention if discomfort Persists
Ingestion : No treatment necessary

***** **5. Fire Fighting Measures** *****

Flash Point : None
Autoignition Temperature : Not Applicable
Explosive Limits : LEL: Not Applicable
UEL: Not Applicable

Extinguishing Media : Use media suitable for surrounding fire

Unusual Fire or Explosive Hazards : Not Known

Fire Fighting Instructions : No special requirement

***** **6. Accidental Release Measures** *****

Large Spill / Leak Procedure : Contain spill and recover for use or disposal

Small Spills : Flush area with water

***** **7. Storage and handling** *****

Storage Requirements : Store in original container in clean, cool and dry place. Use before expiration date printed on package

Handling Precautions : No special handling requirements.
Follow normal hygienic and housekeeping standards for agricultural products

***** **8. Exposure Control / Personal Protection** *****

Ventilation : Special ventilation is not required

Protective Clothing / Equipment : No special requirement

Respirator : Not required

Contaminated Equipment : Clean with soap and water

Comments : Practice general personal hygiene

after using this product. Wash hands with soap and water before eating, drinking or smoking.

***** 9. Physical and Chemical Properties *****

Physical State	: Liquid
Colour	: Light yellow
Odour	: Mild
Water Solubility	: Soluble
% Volatile volume	: Not determined
Specific Gravity	: -
Vapour Pressure	: Not determined
Vapour Density	: Not determined
pH	: 6.5 – 7.5
Melting Point	: Not Determined
Boiling Point	: N.A.
Freezing Point	: N.A.

***** 10. Stability and Reactivity *****

Stability	: Stable
Conditions to avoid	: None
Hazardous Polymerization	: Will not occur
Chemical Incompatibilities	: Avoid contact with any chemical
Hazardous products of decomposition	: None

***** 11. Toxicological Information *****

Eye Effects / Eye Irritation	: Non-irritating
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Acute Oral Effects : None
Acute Inhalation Effects : None
Acute Dermal Effects : None
Skin Irritation : Non-irritating
Skin Sensitization : Not a skin sensitizer

***** 12. **Ecological Information** *****

The product contains non-pathogenic bacterial strains that occur naturally in soil and is biodegradable.

***** 13. **Disposal Consideration** *****

Disposal: Small amounts of the product which cannot be used according to the label instructions may be disposed off in a landfill

RCRA Waste Status: This product is not regulated as a hazardous waste. State and local regulation may affect the disposal of this product. Consult your state, local or provincial environmental agency for disposal of waste other than by use according to instructions.

***** 14. **Transport Information** *****

Transportation Data : This product is not regulated as a hazardous material for all modes of transportation

Hazard Class : Not Applicable

ID No. : Not Applicable

***** 15. **Regulatory Information** *****

TSCA : All components of this product are listed on TSCA Inventory

SARA Section 313 : Contains no reportable components

OSHA Hazard Classification : Non Hazardous

Proposition 65 : Contains no components subject to
Warning requirement

WHMIS / Controlled Products Regulations : This products has been classified in accordance with the hazard criteria of the CPR and this MSDS contains all of the information required by the CPR

***** **16. Other Information** *****

NFPA Ratings

Health : 0

Flammability : 0

Reactivity : 0

Specific Hazard : Not Applicable

Information presented on this Material Safety Data Sheet is believed to be accurate at the time of publication. No warranty, expressed or implied, is made with regard to this information. This information may not be adequate for every application, and the user must determine the suitability of this information due to the manner / conditions of use, storage or local regulations.
