
PRODUCT IN FOCUS

EXSYN®
ESSENTIAL CHEMISTRY

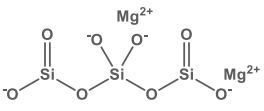
# Magnesium Trisilicate BP (Trisilicalm)

## INTRODUCTION

Magnesium trisilicate is an inorganic compound commonly used in pharmaceutical and gastrointestinal (GI) preparations due to its dual action. It is usually produced as a white, odorless, fine powder. It helps bind toxins or irritants in the gastrointestinal tract and occasionally used in formulations for its stabilizing properties.

## MANUFACTURE

Magnesium trisilicate is generally prepared through a precipitation reaction involving soluble magnesium salts such as magnesium sulfate ($MgSO_4$) or magnesium chloride ($MgCl_2$) and sodium silicate ($Na_2SiO_3$). The solutions are combined under carefully controlled conditions and allowed to age, leading to formation of a precipitate. The precipitate is then filtered and thoroughly washed before being dried at a regulated temperature. The dried product is subsequently milled to achieve the desired particle size and evaluated according to British Pharmacopoeia standards.

| | |
|---|---|
| **Synonyms** | Silicic acid ($H_4Si_3O_8$), magnesium salt (1:2); Magnesium silicon oxide; Magnosil |
| **CAS no.** | 14987-04-3 |
| **EC no.** | 239-076-7 |
| **Molecular formula** | $Mg_2O_8Si_3$ |
| **Molecular weight** | 260.86 |
| **Structure** |  |

## APPLICATIONS

Magnesium trisilicate exhibits both antacid and adsorptive properties, making it highly valuable in GI formulations. Its detailed applications are outlined below:

### Pharmaceutical Applications

Used in Antacid and Anti-diarrheal Formulations

- Widely used in antacid suspensions and tablets
- Provides slow and sustained antacid action compared to fast-acting antacids
- Adsorbs toxins, bacteria and gases- act as digestive remedies.
- Also, used as pharmaceutical excipient as it helps improve tablet compression and uniformity

### Nutraceutical & OTC Products

Used in over-the-counter digestive aids

- Combined with aluminium hydroxide and Simethicone
- Provides balanced acid control + gas relief

### Industrial Applications

Adsorbent & Purification Agent:

- Used in oil refining and purification
- For removal of color bodies and impurities

Catalyst support:

- Provides high surface area silica matrix
- Used as a support material in catalytic reactions

### Rubber & Plastics Industry

- Functions as filler and reinforcing agent-improves mechanical strength and heat resistance

### Cosmetics & Personal Care

- Found in face powders, creams and lotions
- Used as oil absorbent & mattifying agent.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### SPECIFICATIONS

| Test | Unit | Specification |
|---|---|---|
| Appearance | - | White powder or nearly white powder |
| Identification | - | Solution gives reaction of magnesium salt & silicates |
| Solubility | - | Practically insoluble in water and in ethanol |
| Alkalinity | - | NMT 1.0 mL of 0.1 M HCl required |
| Arsenic | ppm | NMT 4.0 |
| Chloride | ppm | NMT 500 |
| Sulphate | % | NMT 0.5 |
| Water Soluble Salts | % | NMT 1.5 |
| Acid Absorption | - | Min 100 mL of 0.1 M HCl per gram |
| Loss on Ignition | % | 17.0 to 34.0 |
| **Assay** | - | |
| For Magnesium Oxide | % | NLT 29.0 |
| For Silicon Dioxide | % | NLT 65.0 |

### STORAGE & PRECAUTION
Preserve in close container

### PACKING
Globally compliant packaging

### REACH Status
Not registered

ExSyn offers Magnesium Trisilicate BP on commercial scales and welcomes enquiries. No matter the quantity you need, our exceptional quality and service will make ExSyn your supplier of choice! If you need any additional information or SDS, please contact us.