

# Calcium Formate

Accelerator & Strength Enhancing Additive for Construction materials

## Overview

AXELRATE Calcium formate, a highly versatile and efficient chemical compound, has established itself as a significant contributor to the construction industry. Chemically designated as  $\text{Ca}(\text{HCOO})_2$ . AXELRATE Calcium Formate is Manufactured in India by Geocon in fine, white crystalline powder. It boasts numerous noteworthy properties, including high water solubility, stability, and a neutral to slightly acidic pH. Produced by the reaction of calcium oxide with formic acid, this compound plays a crucial role in enhancing the performance and durability of construction materials.

AXELRATE Calcium Formate serves as a setting accelerator in cement, strengthens concrete, and functions as an antifreeze additive, especially in colder climates. Its incorporation into construction practices marks a significant step towards more efficient, robust, and adaptable building methodologies that can cope with diverse environmental and operational demands.

## Advantages of Using Calcium Formate

**Improved Workability:** Enhances the workability of concrete and mortar, facilitating easier application and handling.

**Faster Construction Timelines:** Due to its setting acceleration properties, it allows for quicker turnaround times in construction projects.

**Enhanced Durability:** Contributes to the longevity of concrete structures by improving strength and resistance to environmental factors.

**Versatility:** Suitable for a wide range of construction materials and applications.

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## Specifications

Form. .... White crystalline powder  
 Chemical formula.....( $\text{C}_2 \text{H}_2 \text{O}_4 \text{Ca}$ )  
 Calcium Formate .....98% min.  
 Bulk Density  $\text{kg/m}^3$  ..... 1.8 - 2.1 g/cc  
 Particle size  $>250\mu\text{m}$  % .....Max 35  
 Specific gravity..... 2.023( $20^\circ\text{C}$ )  
 Pyrolysis temperature.....  $>400^\circ\text{C}$   
 Solubility.....16gm in 100 gm water

### Heavy metals

Arsenic, mg/kg..... <12  
 Cadmium, mg/kg..... <0.75  
 Lead, mg/kg..... <30  
 Mercury, mg/kg .....<0.1

## Applications in Construction

**Cement Accelerator:** Calcium formate acts as a catalyst, accelerating the hardening of cement. This is especially beneficial in cold weather conditions, where it reduces setting time.

**Enhancing Concrete Strength:** It improves the overall strength and durability of concrete by accelerating the hydration process of cement, leading to quicker development of compressive strength.

**Antifreeze Properties:** In colder climates, calcium formate helps prevent freezing in concrete mixtures, making it an effective antifreeze additive.

**Tile Adhesives and Grouts:** Its application in tile adhesives and grouts improves adhesion, flexibility, and resistance to temperature varia

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Regd. Office- R-2057, Akshar Business Park, Janta Market  
Road, opposite APMC, Sector 25, Turbhe, Navi Mumbai,  
400703, India

T- 022 20870030/40

E-mail: [info@geoconproducts.com](mailto:info@geoconproducts.com)

[www.geoconproducts.com](http://www.geoconproducts.com) [www.geoconproducts.co.in](http://www.geoconproducts.co.in)

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