Admixture

Appropriate admixtures can be applied to extend special properties of CEMEX OPC. Trial mixes shall be conducted to ascertain its' compatibility, addition rate and maximum dosage.

Batching & Mixing

Batching and mixing of mortar & concrete shall be carried out with a pre-determined mix design. In preparing concrete or mortar mixes, proportioning of constituents are measured by either weight or volume. Readymixed or plant-mixed concrete are normally designed by weight, while site-mixed or manual applications are typically done by volume, to control constancy of results that should satisfy project requirements.

Placing

Concrete shall be placed to its final position before initial setting has started and shall not be successively disturbed. In many types of construction, concrete is placed into the forms and then consolidated by means of compaction. Consolidation densifies concrete within the forms, around reinforcements and embedded items. Proper compaction is usually conducted to avoid honeycomb and entrapped air.

Finishing

To produce a desired surface appearance, finishing operation should be carefully planned. It should be conducted on a proper timing considering weather condition and concrete setting time. Follow standard procedures on concrete finishing using appropriate tools and equipment.

Curing

As to all concrete, proper curing is essential to achieve the desired concrete properties. Typical concrete curing practice allows a minimum of 7 days curing period. Maintaining concrete in a moist condition using water sprinklers or spray, covered with wet burlap and/or polyethylene sheets, curing compounds coating and other water retaining techniques.

Storage and Handling

For Bulk: CEMEX OPC shall be stored in an air-tight, water-proof silos, or in any manner to protect the material from moisture and contamination.
For 50-kg Paper Bags: Paper bags are susceptible to damage, hence care should be taken in handling the material. It is recommended that bagged cement shall not be stored in stacks to more than 10 layers high
For Jumbo bags: It is recommended that cement delivered in jumbo bags shall not be stored in stacks to more than 2 layers high.

Availability

In bulk, 50 kg Bag, & Jumbo Bags.

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Material Safety Datasheet

ORDINARY PORTLAND CEMENT, CEM I 42.5N

It is important that you, or any persons working for you or to whom you have given OPC to become familiar with the information given on both pages of this datasheet before handling, using or disposing of the product.

Hazard Information

1. Hazardous ingredients of materials Not classified as hazardous

Composition / information on ingredients

- Portland Cement Clinker (CAS# 65997-15- 1) approximately - 63.5-96.0 % by weight
- ACGIH TLV-TWA (2000) = 10 mg total dust/m3
- OSHA PEL (8-hour TWA) = 50 million particles/ft3
- Calcium Carbonate (CAS# 1317-65-3) approximately - 25.0-30.0 % by weight
- ACGIH TLV-TWA (2000) = 10 mg total dust/m3
- OSHA PEL (8-hour TWA) = 15 mg total dust/m3
- OSHA PEL (8-hour TWA) = 5 mg respirable dust/m3
- Gypsum (CAS# 7778-18-9) - approximately - 4.0-6.5 % by weight
- ACGIH TLV-TWA (2000) = 10 mg total dust/m3
- OSHA PEL (8-hour TWA) = 15 mg total dust/m3
- OSHA PEL (8-hour TWA) = 5 mg respirable dust/m3
- Respirable quartz (CAS# 14808-60-7) -approximately - 0.29-3.1 % by weight
- ACGIH TLV-TWA (2006) = 0.025 mg respirable quartz dust/m3
- OSHA PEL (8-hour TWA) = (10 mg respirable dust/m3)/(percent silica + 2)

2. Hazards Identification

Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder or with wet OPC can cause moderate eye irritation. Eye exposure requires immediate first aid to prevent significant damage to the eye.
Skin Contact: OPC may cause dry skin, discomfort, irritation and dermatitis.
Dermatitis: OPC is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as inflammation, rash and dry reddish itchy skin.
Inhalation: (Acute) Breathing dust may cause nose, throat or lung irritation, including choking, depending on the degree of exposure.
Inhalation: (Chronic): Risk of injury depends on duration and level of exposure.
Silicosis: This product contains crystalline silica. Prolonged or repeated inhalation of irrespirable crystalline silica from this product can cause silicosis, a seriously disabling and fatal lung disease.
Silicosis increases the risk of tuberculosis.
Emergency Action
3. First Aid Measures
3.1 Eye Contact:
Rinse eyes thoroughly with water for at least 15 minutes including under lids to remove all particles. Seek medical attention for abrasions and burns.
3.2 Skin Contact: Wash with cool water and a pH neutral soap or a mild skin detergent. Seek medical advice for rash, irritation, dermatitis and prolonged unprotected exposure.
3.3 Ingestion: Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention or contact poison control center.

ORDINARY PORTLAND CEMENT

Technical Data Sheet

Product Description

CEMEX Falcon's Ordinary Portland Cement "CEMEX OPC" is a dark grey, fine powder produced by grinding Portland Cement Clinker, Gypsum (Calcium Sulfate) and limestone as minor additional constituent. It belongs to Strength Class 42.5 N, CEM I as per BS EN 197-1 standard requirements and equivalent to Type -1 of ASTM C-150 standard specification for Portland Cement. It is the most common type of cement, widely used in the construction industry and ideal for a broad range of applications.
CEMEX OPC is manufactured in CEMEX Falcon LLC plant in Jebel Ali, Dubai UAE under a strict ISO 9001 system and following CEMEX's international production and quality standards. The raw materials Clinker, Gypsum & Limestone are secured from the best-known available sources and the finished product is tested in CEMEX's state-of-the-art quality control laboratory ensuring compliance with standard requirements.

PHYSICAL PROPERTIES

Description	Requirement as per BS EN 197-1:2011	Typical Results (Range)
Fineness: Blaine Air Permeability (m2/kg)		310 - 330
Specific Gravity		3.13 – 3.14
Soundness : Le Chatelier Exp., mm	≤ 10	0.10 – 0.15
% Standard Consistency		26.0 – 28.0
Time of Setting : Vicat Test		
Initial, minutes	≥ 60	180 - 190
Final, minutes		220 - 230
Compressive Strength, MPa		
2 Days	≥ 10	22 - 26
7 Days		38 - 42
28 Days	≥ 42.5 ≤62.5	48 - 52

CHEMICAL PROPERTIES

Description	Requirement as per BS EN 197-1:2011	Typical Test Results
% Loss on Ignition	≤ 5.0	3.40 – 3.50
% Insoluble Residue	≤ 5.0	0.20 – 0.40
% SiO2		19 – 21
% Al2O3		5.0 – 5.2
% Fe2O3		3.2 – 3.4
% CaO		63 - 64
% MgO		1.3 – 1.5
% SO3	≤ 3.5	2.4 – 2.6
% Na2O equivalent		0.4 – 0.7
% Cl	≤ 0.10	0.01 – 0.03
% Free CaO		1.0 – 2.0
% Tri-calcium silicate		53 - 55
% Di-calcium silicate		15 - 17
% Tri-calcium aluminate		7 - 9
% Tetra-calcium aluminoferrite		9-11

Applications & Usage

- For general purpose.
- Structural & Non-structural Concrete Applications.
- Cast-in-place Concrete structures, foundations & pavements.
- Pre-cast, pre-stressed, post-tensioned concrete elements and all types of manufactured concrete products.
- Mortars & Grouts.
- Screed, shotcrete, pavers, bricks, plasters, stucco, blocks, and all types of masonry applications
- Cementitious grouts, Non-shrink grouts, render, among others.

Advantages & Benefits

- All-purpose type of cement.
- High compressive strength.
- Applicable for all types of high strength concrete applications.
- Faster setting time.
- Higher early-strength.
- Widely used type of cement, thus easy to handle and user-friendly.

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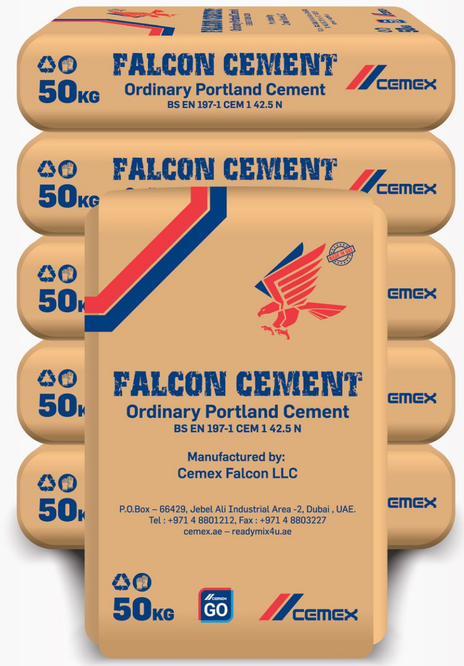
MADE IN UAE



FALCON OPC

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4. Fire Fighting Measures
Flash point and method: Non Combustible.
General Hazard : Avoid breathing dust.
Fire Fighting Equipment: OPC posses no fire related hazard.
Combustion Products: None
5. Accidental Release Measures
Place spilled material into a container. Avoid actions that can cause the OPC dust to become air borne.
Avoid inhalation and contact with skin. Wear appropriate PPE. Scrape the OPC and place in container. Allow material to dry or solidify before disposal. Do not wash OPC down sewage and drainage systems or into bodies of water. Waste Disposal: Dispose of OPC according to Federal, State, provincial and local regulations.
6. Handling & Storage
Keep OPC dry until used. Normal temperatures and pressures do not affect the material. Promptly remove dusty clothing or clothing which is wet with cement fluids and launder before reuse. Wash thoroughly after exposure to dust or wet cement mixtures or fluids.
7. Exposure Controls/Personal Protection
7.1 Engineering Controls: Use local exhaust or general dilution, ventilation or other suppression methods to maintain dust levels below exposure limits.
7.2 Personal Protective Equipment:
a. Respiratory Protection:
Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.
b. Hand and Skin Protection:
Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.
c. Eye Protection.
Wear ANSI approved glasses or safety goggles when handling dust to prevent contact with eyes. Under dusty conditions, wearing contact lenses is not recommended.

Product Information
8. Physical & Chemical Properties

Appearance	Gray Powder
Odor	No distinct odor
Physical state	Solid (powder) ph (in water)-12 to 13
Solubility in water	Slightly soluble (0.1 to 1.0%) Vapor pressure (N/A)
Vapordensity	N/A boiling point | N/A (i.e.,>1000 C)
Melting point	N\A Specific gravity (H2O=1.0) - 2.87- 3.00
Evaporation rate	N/A

9. Stability & Reactivity
Stability: Stable.
Conditions to Avoid: Unintentional contact with water.
Incompatibility: Wet OPC is alkaline. As such it is incompatible with acids, ammonium salts and phosphorous.
Hazardous Decomposition: Will not spontaneously occur. Adding water produces (caustic) calcium hydroxide
Hazardous Polymerization: Will not occur.
10. Toxicological Information
Swallowed: Ingesting large amounts may result in nausea and minor discomfort.
Eyes: Any fine dust may be an eye irritant.
Skin: Dust is irritating and drying to the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis.
11. Ecological Information
Ecotoxicity: No recognized unusual toxicity to plants or animals Relevant physical and chemical properties (See Sections 9 and10.)
12. Disposal Considerations
Dispose of waste and containers in compliance with applicable Federal, state, provincial and local regulations
Keep material out of storm water and sewer drains.
Measure to be taken to prevent dust generation during disposal and exposure and personal precautions should be observed.
Additional Information

14. Regulatory Information
Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200 - Plastic cement is considered a "hazardous chemical" under this regulation, and should be part of any hazard communication program.
Status under CERCLA/SUPERFUND 40 CFR 117 and 302 - Not listed.
Hazard Category under SARA(Title III), Sections 311 and 312 - Plastic cement qualifies as a "hazardous substance". with delayed health effects.
Status under SARA (Title III), Section 313 - Not subject to reporting requirements under Section 313.
Status under TSCA (as of May 1997) - Some substances in plastic cement are on the TSCA inventory list.
Status under the Federal Hazardous Substances Act - Plastic cement is a "hazardous substance" subject to statutes promulgated under the subject act.

Guidance References
Exposure Limits (OSHA)

IMPORTANT NOTES
The purpose of this datasheet is to provide Health, Safety and Environmental guidance on the safe handling, use and disposal of OPC supplied.
The information contained in this datasheet is correct at the date of, and applies only in relation to the supply of material referred in the delivery docket .
This datasheet should alert purchasers and/or users to the usual hazards in handling the supplied material when using it within the ordinary range of uses for which such material is normally supplied. If you have purchased or arranged the supply on behalf of a third party who will work with the material supplied it is your duty to pass this information on to them BEFORE such work commences.
For the avoidance of doubt the datasheet DOES NOT constitute the user's own assessment of workplace risk as may be required by other safety legislation and nothing herein shall be construed or relied upon as relieving the purchaser, user or any intermediate supplier or third party from any statutory or other legal duty which may apply to them or from taking care or precautions to protect themselves or others to whom they owe a duty of care.
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