khemechemical

Providing chemistry
Providing solutions

Grinding Aid Admixtures

PROVIDING CHEMISTRY
PROVIDING SOLUTIONS

Kheme Chemical is a company that belongs to Corporacion F. Turia, a Spanish business group with almost 100 years of history in the construction industry, waste management and the agricultural sector. Within the construction sector, it has leading companies in the production of cement, concrete, aggregates and chemical products. These last ones manufactured by **Kheme Chemical**:

- GRINDING AID ADMIXTURES.
- MORTAR AND CONCRETE ADMIXTURES

Kheme Chemical is a very active company involved on Research, Development and Innovation of high tech products according to the needs and requirements of their customers. For that, Kheme Chemical uses to collaborate with research institutions such as universities and Building Materials Institutes

Kheme Chemical success is based on their high talent staff who is involved in all construction sectors day to day. They know which are the construction industry needs providing chemical solutions and technical assistance to optimize the production processes of their customers. That fact makes the difference with the competence.

VISION / MISSION
VALUES

- **VISION**
  Innovation + Development of High Tech chemical products, in a sustainable manner and respecting the environment. With worldwide presence and favoring the development of various sectors in order to satisfy the current and future needs of society.

- **MISSION**
  To develop, produce and distribute high quality chemical products internationally. Individual technical support that helps to achieve high quality and cost-effective production for our clients.

- **VALUES**

Innovation/	Ongoing search for new differentiated products.
Quality/	Excellence in production, distribution and customer service with high performance products.
Service/	Always providing the maximum value to our clients.
Responsibility/	Commitment and transparency within the company, suppliers and clients.
Sustainability/	All our actions seek the company's profitability, with total commitment to preserve the environment, in development, production and application.

TECHNICAL TEAM

Kheme Chemical counts on a qualified technical team that makes the company stand out from the competition in certain key areas:

1 **Product research and development**/ A team of chemists and engineers with ample experience in the construction industry, primarily in the production of cement, concrete and mortar. A department made up of specialized staff with pHD degrees on materials science whose main expertise is based on characterization techniques, product development and performance evaluation.

The team has extensive professional experience in Research, Development and Innovation (RDI) both in multinational cement companies and in technical construction institutes. They are responsible for developing the technology of our admixtures and use them for the needs and realities of the market and our clients.

2 **Assistance and technical support** / We count on the knowledge of professionals who have more than 30 years of experience in the cement industry and in the research of materials for cement production. Through our parent company, our technical team is present in the AENOR cement standardization committee for the drafting of UNE rules (Spanish Rule). This technical team visits the client's facilities to test and provide individual assistance following our methodology.

3 **Our production plant** / For the manufacturing and packaging of our products, we have excellent facilities approved by European and international regulations in order to guarantee the quality of our products. We also count on a team with ample experience in cement, concrete and mortar plants.

Kheme Chemical strives for operational excellence at all times in order to ensure product quality through optimized processes and the use of high quality raw materials.

1

PRODUCT RESEARCH AND DEVELOPMENT

PRODUCT DEVELOPMENT
Equipment for the synthesis and development of new cement, concrete and mortar admixtures in association with research institutions, both Spanish universities and certification associations, with which it has research and development agreements.

EVALUATION and QUALITY CONTROL
Our own laboratory has state-of-the-art equipment ensuring all the tools necessary for our chemists to evaluate and develop new cement, mortar and concrete admixtures.

INDUSTRIAL SCALE LABORATORY
We are our main client since we use **Kheme Chemical** admixtures in our group's cement and concrete plant, with which we cooperate in the development of new products, receiving continuous feedback about the quality and performance of our admixtures.*

* INDUSTRIAL SCALE LABORATORY

Ball Mill CEMTEC (double chamber).
Dimensions 14 x 4,4Ø m.
Production: 140 t/h
Operation by means of a geared motor FLENDER (4300 kW).
Separation circuit, fan and cyclones.
Regulation of the mill by consumption of the output elevator, electronic monitoring, production return flowmeter and by consumption of the mill engine.
PFEIFFER shield for lifting in the first chamber and for classification in the second chamber.

2 WHAT MAKES US DIFFERENT

ASSISTANCE & TECHNICAL SUPPORT

Some of the services offered by **Kheme Chemical** regarding technical assistance are the following:

- Study of raw materials for the development of **specific grinding admixtures**.
- **Periodic audits** of the mill performance, reviewing the operation of the separator, ball charge, ventilation, recirculation, retention time or improvement measures in the exit temperature of cement, among others.
- **Comparative cost** estimation of the use of different **Kheme Chemical** cement admixtures with entry pricing data of raw materials, production costs (maintenance and electric energy), mechanical resistance achieved and fineness.
- Communication and continuous technical assistance:

  - Contact through **technical visits**, **telephone**, **teleconference** and by **e-mail**.

  - **Follow up** of different clinker entries and their grinding influence.

  - Periodic international anonymous **comparative testing** where information about cement and raw material samples performed by **Kheme Chemical** is confidential.

  - **Transfer of knowledge** through reports about obtained results and indicated improvements. Economic proposals can be delivered if enough information is available.

METHODOLOGY OF INDUSTRIAL TESTS

- **1/ Collection of information**

  Kheme Chemical provides a checklist for clients to fill out with information about the grinding plant, process needs and products they already use (grinding aids - production/strenght improvers, setting retarder or accelerator, water demand reducers, air entrained agents or others) and possible existing limitations. Cement, clinker, admixture or addition samples are requested to conduct laboratory studies. **Kheme Chemical** supports ongoing communication via video calls and emails.

- **2/ Previous studies and preparation of admixtures for testing**

  After, different types of admixtures are proposed and delivered from **Kheme Chemical** for testing. Usual delivery is performed in containers of 1,000 liters. The previous approximate dose is indicated for testing. With certain **Kheme Chemical** admixtures, such as air entrained agents or setting retarders, before performing industrial tests, additional exhaustive tests are performed to find the optimal dosage.

- **3/ Test schedule and test type explanation**

  Tests are performed preferably in the presence of Kheme Chemical's technicians. All phases are previously agreed upon with the client.

  Testing must be performed ensuring a stable performance of the mill. Testing must be interrupted if process alterations are detected, in order to assure a correct comparison. Ensuring the uniformity of raw materials is very important.

  Regardless of the supply system and the available admixture dose for testing, the flows provided must be known. For that, a test tube and a / chronometer must be used.

  Once it has been confirmed that the admixture to be tested is performing its intended effect (a certain waiting time is defined after it is introduced, according to the particular process characteristics), the scheduled cement sampling is performed.

  Depending on the particular situation of the grinding plant, some of the below tests are performed.

  Description of the types of tests:

  Type A Case of a factory that currently doesn't use admixtures, comparison with/without a **Kheme** admixture .
  Type B1 Case of a factory that currently uses admixtures, comparison with/without a **Kheme** admixture.
  Type B1 Case of a factory that currently uses admixtures, comparison of the online admixture/with a **Kheme** admixture.

- **4/Samples Testing - Performance Evaluation**

  The samples obtained in the tests are analyzed following standard procedures at the client's facilities. It is always recommended that comparative tests are performed in Kheme Chemical laboratories.

  After testing is carried out, results are reported to the customers showing those achieved improvements (production gain, strenght increase among others). Other economic improvement reports can be submitted if there is enough information available.

All the collected and generated information is treated with the maximum confidentiality.

3

OUR PRODUCTION PLANT

- Production capacities adapted to the technical needs and **quality demands** of **Kheme Chemical's** products.
- Our production units, facilities and equipment fullfill extensively with **European** and **International regulations**.
- All the production processes count with quality control that guarantees full traceability of the products we send to our clients. **Quality Control** is performed with accredited external certification companies.
- The raw materials used in the production of our admixtures count with quality control ensuring the performance required by the technical and production departments.
- We perform **ongoing audits** to our suppliers to guarantee that the services and products they offer will not affect either the quality of our products or our customer service.
- Supply with **different formats**: barrels (200 L), IBC (1000 L) and in bulk with tanker trucks or Flexi-Tank.

CERTIFICATIONS AND PARTNER UNIVERSITIES

GOBIERNO DE ESPAÑA
MINISTERIO DE INDUSTRIA, TURISMO Y COMERCIO

CE AENOR

Applus+

ENAC
CERTIFICACIÓN
Nº 04/C-PE004

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

VNIVERSITAT DE VALÈNCIA

EFFECTS OF GRINDING AIDS

▶ **Type of Grinding Aid**

- Production improvers
- Strength improvers
- Special (Air occluders, setting accelerators or retarders and water reducers)

▶ **General Concepts**

The deagglomeration effect caused by grinding aids on clinker and supplementary cementitious materials particles leads to lower particles coatin on balls and plaques mill. This optimizes the crushing effect of grinding elements by improving the separation of the already sufficiently ground powder from the coarse powder. The reduction of adhesive forces in the material not only affects the grinding process itself, but also affects it during transportation, dusting, silage, packing, shipping or outdoor transportation.

▶ **Time spent by the material within the mill**

Grinding aid reduce the time spent by the material within the mill due to the deagglomeration effect. Thanks to that, the separator is getting faster and ground particles are eliminated in a more effective way..

The use of grinding aid causes changes in the grinding process. As soon as the admixture is introduced into the first chamber of the mill, an increase in noise level is observed in the first chamber and a decrease in the second chamber. This is due to the immediate reduction in the resistance time of the material in the mill, which is associated with a reduced circulation load and an increased consumption of the finished product elevator as a result of emptying the mill.

▶ **Work in the separator**

As a consequence of the reduced adhesive forces between particles, the separator works better, and therefore less fine ground material is returned to the mill.

▶ **Transporting the material**

The higher fluidity of cement facilitates pneumatic elevation and the output of the silo. It also speeds up the loading of vehicles that are loaded faster and are emptied faster.

▶ **Effect on resistance**

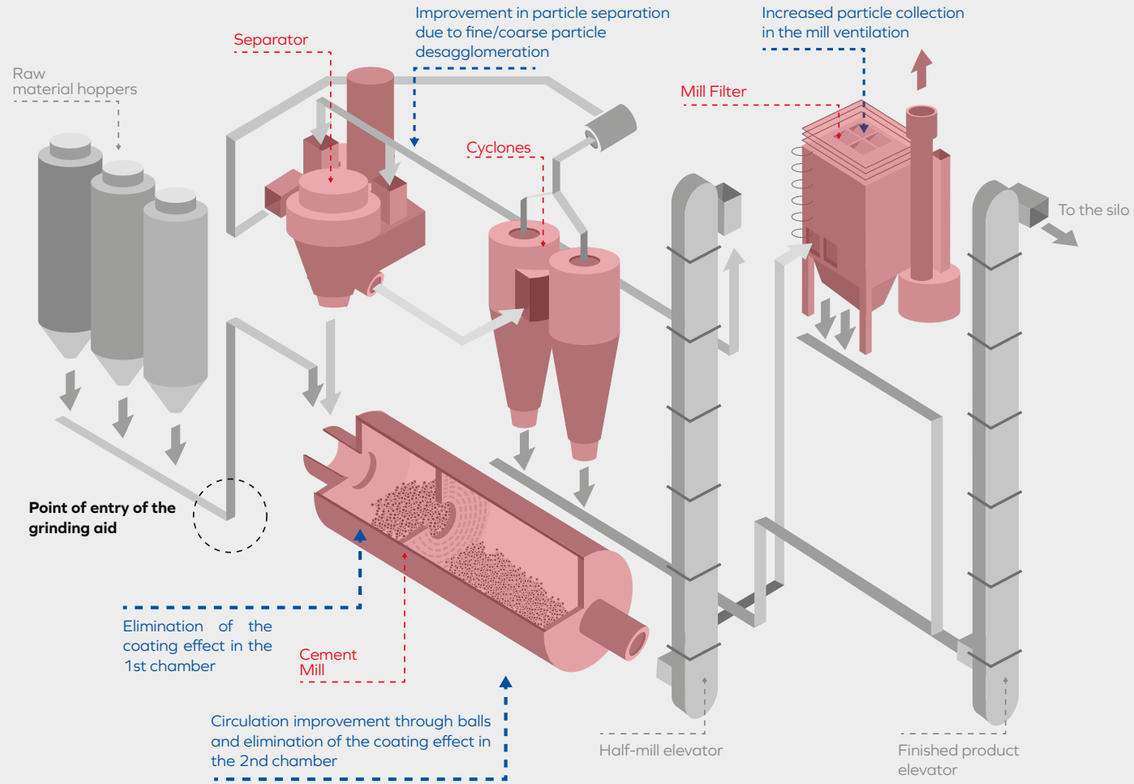
The surfactant effort also has an improving effect on cement resistance. There is an improvement in the mechanical performance of cement, at the same fineness as Blaine, especially in the initial resistance. This is due to a more refined grading curve of cement, with a higher percentage of particles in the range of 3 to 30 microns (which is the most effective range of particles to achieve mechanical resistance).

On the other hand, the chemical composition of admixtures allows to get the most out of the clinker, enhancing the hydration of its phases and controlling the kinetics of hydration at early, intermediate and late curing ages.

▶ **Additional Effects**

During the cement production process, special admixtures are also used to control the quality parameters according to regulations (for example, setting times) or for the development of special cements such as masonry cements, high fluidity cements and others.

CLOSED CIRCUIT GRINDING AND AREAS WHERE THE ADMIXTURE INTERACTS



Points of improvement in the grinding circuit due to the use of **Kheme Chemical** admixtures.

Benefits of using **Kheme Chemical** admixtures.

WHAT HAPPENS IN THE MILL WHEN A PRODUCTION IMPROVER IS ADDED?

- The aid of clinker within ball or vertical mills has a very important energy contribution within the whole cement production process.. **The total consumed electrical energy during cement manufacturing is around 110 KWh/T, where 40% of it is used to grind the clinker**. Rittinger's Law (1867) demonstrates that specific grinding energy increases exponentially with fineness.

  The optimum sieve fraction in cement manufacturing is found in the range of 3 to 30 microns. The particles below 3 microns hydrate so quickly that they do not provide resistance to cement, and microns higher than 30 microns hydrate very slowly providing resistance at very late stages.

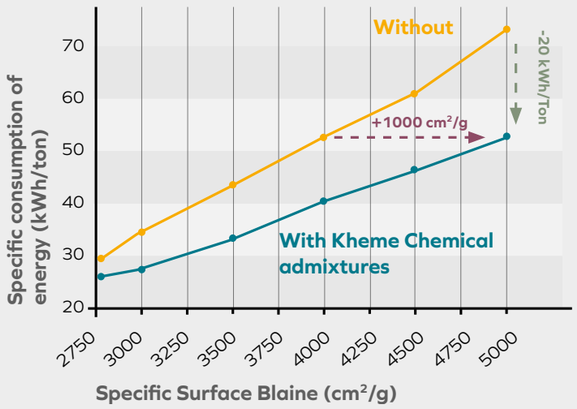
  Grinding aid allow a higher percentage of particles in the range of 3-30 microns, avoiding, in particular, the formation of overground (superfine) particles with a size less than 3 microns.

  The dose, even at low quantities of grinding aid, enables to improve the grinding performance at this stage.

  Grinding aid are mainly found to fight off two phenomena: the re-agglomeration of particles, primarily the ultra fine ones, and the adhesion of cement to the ball load, the mill shield or the separators.

  In fact, cement particles have a tendency to agglomerate due to surface forces: Van der Waals forces and electrostatic forces. This phenomenon is much more marked with finer particles and in presence of gypsum and/or high temperature limestone. This agglomeration produces coarse particles, which negatively influence the grinding efficiency. In fact, grinding agents oppose agglomeration of fine cement particles, and therefore, favor storage conditions and maintenance in cement silos.

DEMONSTRATION OF ENERGY SAVINGS WITH THE USE OF KHEME CHEMICAL ADMIXTURES.



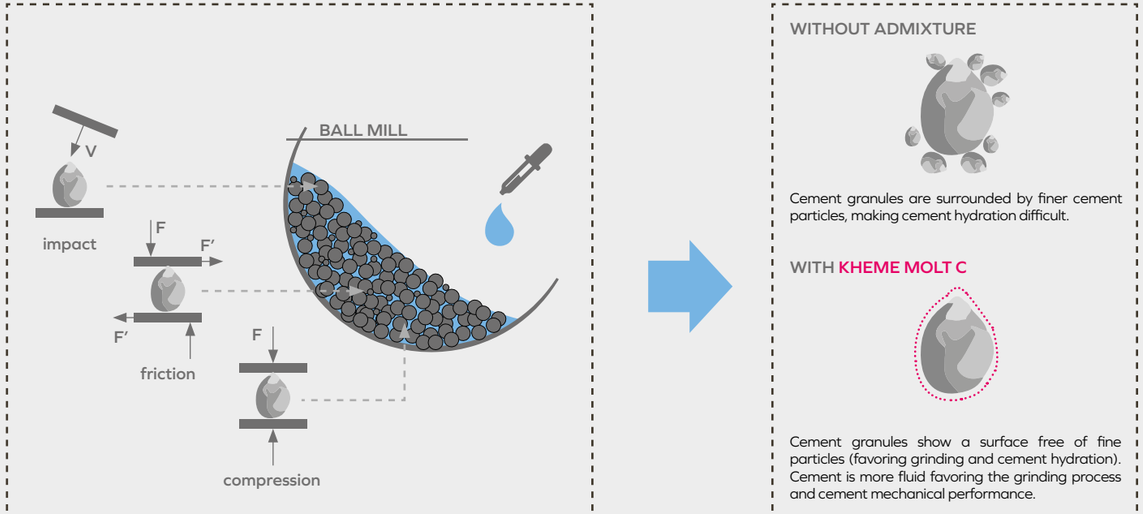
BENEFITS

- With the same energy consumption of 52 kWh/Ton (with/without admixtures), thanks to **Kheme Chemical** technology, an **increase** of **1,000 cm²/g** in specific surface Blaine is achieved.
- To achieve the same specific Blaine surface of 5,000 cm²/g, **20 kWh/Ton** are **saved** using **Kheme Chemical** admixtures.

BENEFITS IN QUALITY AND PRODUCTION

- The cement particle coating effect disappears on the balls and mill walls, and particle agglomeration decreases.

  This provides more grinding efficiency, higher particle flow, **more production**, larger number of dispersed particles (more hydration efficiency and better mechanical performance).



- Cement adhesion occurs on the ball surface and the mill shield. This phenomenon is manifested with the formation of a thin layer that has the effect of a buffering film around the ball charge in the mill. This problem is more significant as temperature increases.

  In this grinding phase, **grinding aid admixtures act by protecting ball and the mill shield from adhesion**, thus improving quality (Blaine, strength) of the obtained cement.

VISUAL EXAMPLE

WITHOUT Kheme Molt C

WITH Kheme Molt C

WHAT HAPPENS TO THE CLINKER WHEN QUALITY IMPROVERS ARE ADDED?

- The clinker quality (mineralogical composition and reactivity degree of its phases) and the degree of cement fineness are the main parameters that have a direct effect on the most important variable of cement, STRENGTH.

- Quality improving admixtures are organic and inorganic compounds that are added to the grinding process to increase the degree of reactivity in the clinker phases. Thus, its quality is enhanced, and a significant improvement in cement mechanical performance is achieved. As a side effect, they can also act as grinding aids and the advantages achieved with their use have a high economic impact on the cost of cement since:

  - Allow **less consumption of clinker** in cements with inert and active additions.

  - Favor **energy savings** since they are able to grind with less fineness.

  - **Less quality clinkers** can be transformed in acceptable quality cements.

  - Have a **favorable impact on the environment** by saving energy and consuming less clinker than cements with additions.

- Kheme Chemical quality improving admixtures act primarily on clinker phases that are less reactive, such as C_3A (lack of initial reactivity) and C_4AF (less reactivity at all stages). As a side effect, the surface of more reactive phases (**Alite** and **Belit**) is more exposed to hydration, increasing the degree of hydration of cement and, thus, mechanical properties. They may also act on reactive additions such as flying ashes, silica fume, natural pozzolans, rice husk ash, granulated blast furnace slag, and others.

GRAPHIC DEMONSTRATION

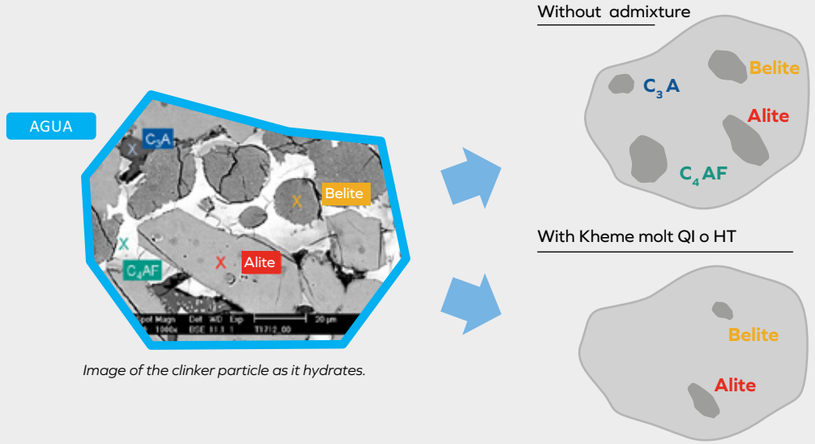


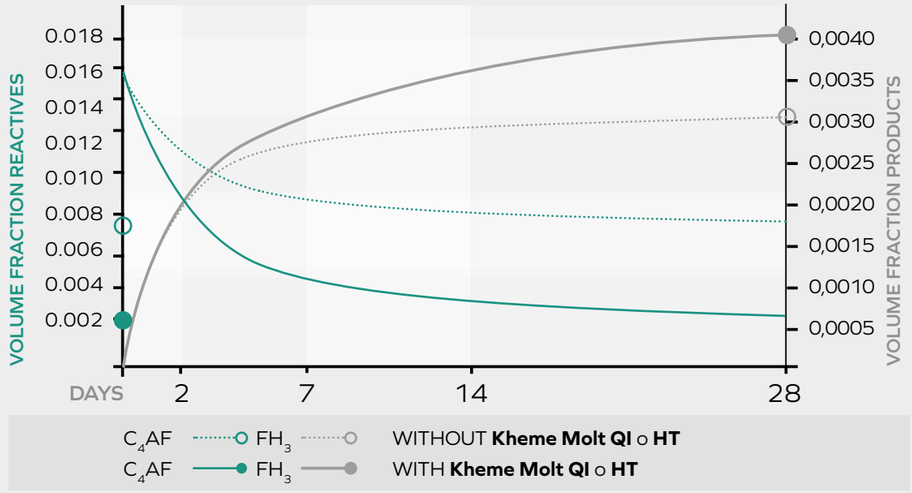
Image of the clinker particle as it hydrates.

BENEFITS

- Stronger hydration in the more reactive phases Belite and Alite with the use of **Kheme Chemical** admixtures

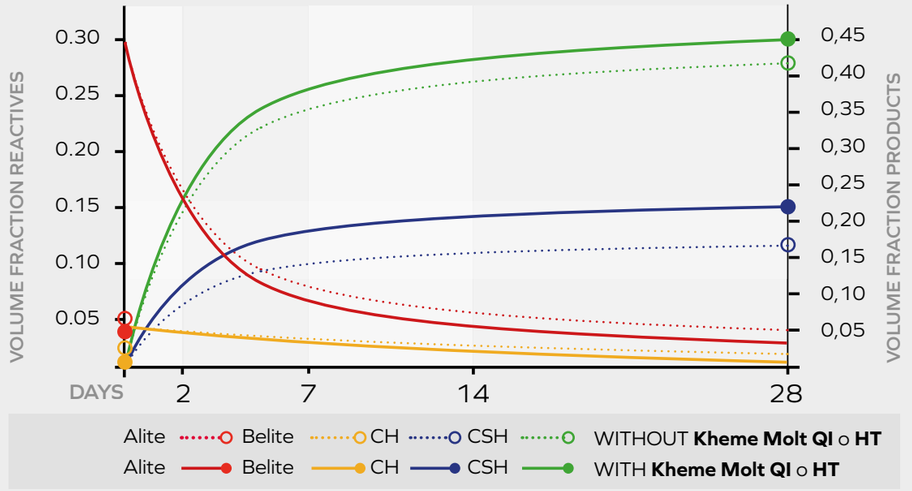
BENEFITS

- **C_4AF** reacts by hydration, forming Al^{3+} and Fe^{3+} complexes and hydration products based on aluminates and iron hydroxides (FH_3).



- As a result of this, **Alite** and **Belite** phases are more exposed favoring their hydration and the formation of reactive products: hydrated calcium silicates (**CSH**) and portlandite (**CH** – calcium hydroxide).

  The development of all these mechanisms, activated by the use of **Kheme Molt QI / HT** admixtures, leads to reduced porosity and greater mechanical performance of the cementitious matrix.



KHEME MOLT Technology

- **MORE EFFICIENCY IN THE PRODUCTION VOLUMES WITH LESS ENERGY CONSUMPTION.**

  Improves cement flow and **reduces the Pack set effect** (cement agglomeration due to settlement) and coating.

  Reduction of the clinker factor, maintaining cement quality.

- **BETTER CLINKER AND ADDITION PERFORMANCE, FAVORING BETTER END RESULTS IN CEMENT.**

  Increase in the initial and/or final **strength**.

  Improves cement flow in mortar and concrete manufacturing.

  Reduction in water demand in mortar and concrete manufacturing.

- **KHEME MOLT C** *(Aid)*
  Grinding aid admixture to improve production and decrease energy consumption thanks to its de-agglomeration effect of cement particles on inner mill metallic surfaces.

- **KHEME MOLT QI** *(Quality Improver)*
  Grinding admixtures to improve production, eliminate or mitigate cement agglomeration in the grinding plants and reduce energy consumption.

- **KHEME MOLT HT** *(High Technology)*
  Mixed grinding admixture: Optimal performance (synergy between Kheme Molt C and QI). It eliminates coating and improves the strength of cement and its additions at different stages.

KHEME MOLT C

Aid

Grinding admixtures for the elimination or attenuation of cement agglomeration in grinding plants.

Grinding aid to improve production, eliminate or mitigate cement agglomeration in grinding plants and reduce energy consumption. The family of **Kheme Molt C** grinding aid is formulated to improve the grinding process of minerals and is especially recommended for the clinker grinding in the cement production process.

PROPERTIES & ADVANTAGES

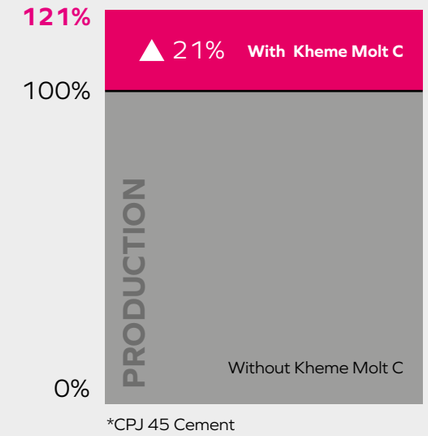
- Significant **reduction** of energy consumption during the grinding process.
- Significant **increase** in cement production (T/h).
- **Improvement** of rheological characteristics and the pack-set of cement eliminating clogging issues within cement silos.
- **Increase** in the percentage of additions, maintaining cement performance.
- **Optimization** of the percentage of additions with equivalent cement strength.
- **Improvement** in cement mechanical behavior: cement strength at 1, 2, 7 and 28 days.
- **Improvement** in the rheology of cement during mortar and concrete manufacturing.
- **Reduction** in water demand during mortar and concrete manufacturing.

Reduction of costs

Increase in quality

OBJECTIVE: **INCREASE IN PRODUCTION**

Actual data of a mill in North Africa



*CPJ 45 Cement

BENEFITS of a real mill in North Africa

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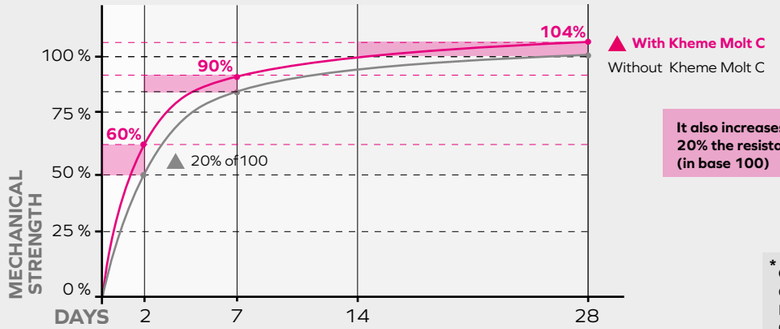
- **According to the factory production:**

  The factory with maximum production capacity
  -Equivalent to an increase of 21% in the size of the factory without investment needs

  Factory producing half the capacity
  -Reduces 21% of the energy cost
  -Possibility of reducing fixed costs

- Due to the efficiency of the **Kheme Molt C** admixture with its contributing power in the dispersion of cement particles, it also increases the mechanical strength at all cement curing ages thanks to favouring the particle hydration (between 4% and 10%).

Actual data of a mill in North Africa



*Cement CPJ 35

-Diagram indicating mechanical strength (in %) achieved by standardized mortar at 2, 7, 28 days.
-Without Kheme Molt / With **Kheme Molt C**

It also increases between 4% and 20% the resistance at all stages (in base 100)

*
CPJ 35
Clinker: 67%
Limestone: 28%
Gypsum: 5%

CPJ 45
Clinker: 80%
Limestone: 15%
Gypsum: 5%

KHEME MOLT QI

Quality Improver

Grinding aid that increases cement strength and quality

Kheme Molt QI technology are the ideal complement to **Kheme Molt C** admixtures by improving the mechanical strenght quality of cements at any required curing age. This fact allows the development of cements with better enviromental characteristics because favour the use of supplementary cementitious materials (limestone filler, fly ashes, groung granulated blast furnace slag, natural pozzolans and others) reducing the quantity of clinker.

PROPERTIES & ADVANTAGES

- **Improvement** in cement mechanical behavior: strength at 1, 2, 7 and 28 days.
- **Reduction** of clinker factor by increasing the degree of addition of supplementary cementitious raw materials.
- **Optimization** of the level of additions with equivalent mechanical strength.
- **Improvement** of cement additions reactivity (fly ash, blast furnace slag and other active additions).
- **Reduction** of general production costs.
- Possibility of **increasing** the sales cost of cement.
- **Improvement** in environmental characteristics of cement production.

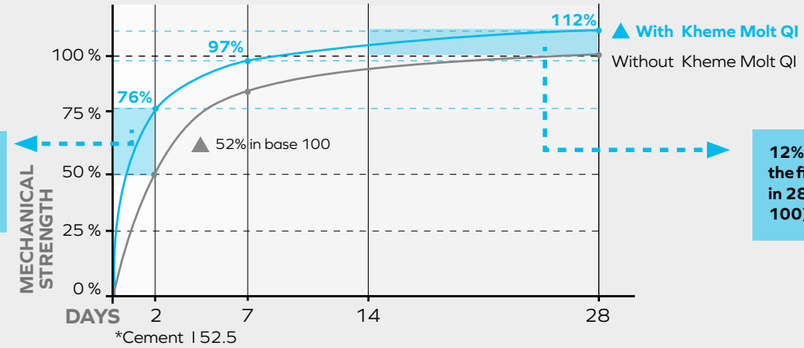
Reduction of costs

Increase in quality

OBJECTIVE: **INCREASE MECHANICAL STRENGTH**

Actual data from a mill in West Africa

52% increase in the initial mechanical strength at 2 days (in base 100).



*Cement I 52.5

12% increase in the final resistance in 28 days (in base 100).

Actual data from a mill in Europe

*Cement II 32.5

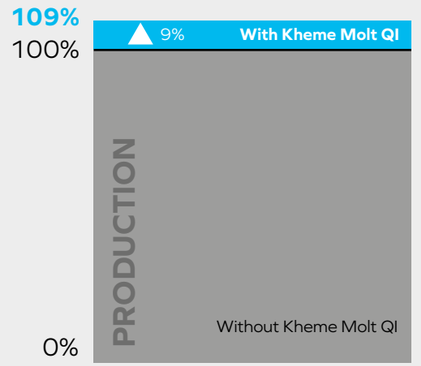
-Diagram indicating mechanical strength (in %) achieved by standardized mortar at 2, 7, 28 days.

-Without Kheme Molt / With **Kheme Molt QI**

BENEFITS of real mills in Europe and West Africa.

- **Increase** between 12% and 52% of mechanical strength at all curing ages or 16% during the final mechanical strength.
- Possibility of **reducing** clinker consumption optimizing production costs.
- The **Kheme Molt QI** range admixtures are formulated with a surfactant agent in conjunction with another activator for mechanical mechanical strength that compensates the increase of additions. Thus, a synergy effect is obtained reflecting the increase in production.

Actual data from a mill in West Africa



*Cement I 52,5 R

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CEM I 52,5 R
Clinker: 95 %
Gypsum: 5%

CEM II/B-L 32,5 N
Clinker: 65 %
Limestone: 30%
Gypsum: 5%

KHEME MOLT HT

High Technology

All-in-one Grinding Aid admixture: Optimum Performance

Grinding aid with **Kheme Molt HT** technology are tailor-made admixtures that eliminate coating and improve cement and addition mechanical strength at all curing ages. A synergy between Kheme Molt C and QI that simplifies the application of the admixture.

PROPERTIES & ADVANTAGES

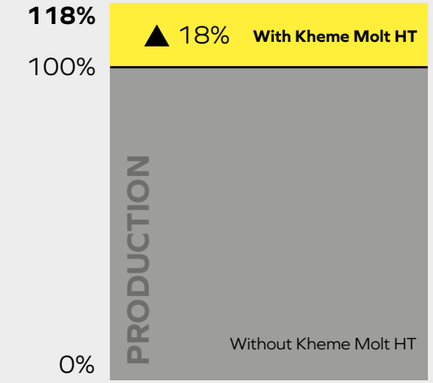
- **Improvement** in productivity. $
- Significant **reduction** of production costs. $
- **Improvement** in rheological characteristics and pack-set of cement, eliminating clogging issues within storage silos. Q
- **Improvement** in addition performance, maintaining the benefits of cement. $
- **Reduction** in clinker consumption and percentage of additions with equivalent mechanical strength. $
- **Improvement** in cement mechanical strength at 1, 2, 7 and 28 days. Q
- **Improvement** of cement rheology during the mortar and concrete manufacturing. Q
- **Reduction** in water demand. Q
- **Improvement** in environmental characteristics and cement production. Q

$ **Reduction of costs**

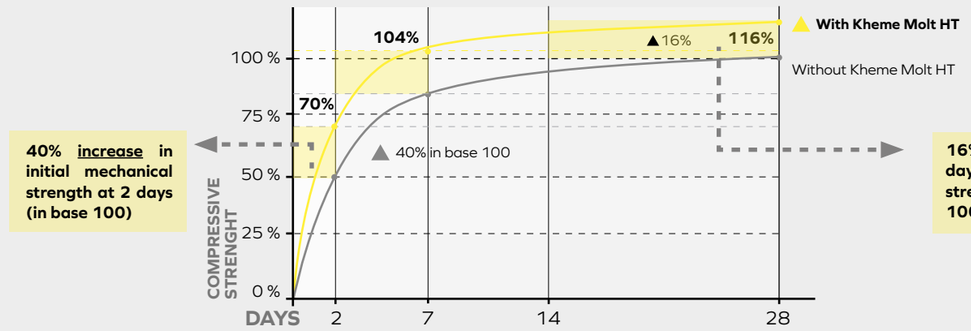
Q **Increase in quality**

OBJECTIVE: **TO INCREASE PRODUCTION & MECHANICAL STRENGTH**

Actual data from a mill in West Africa



*Cement II 32,5



*Cement CEM II 32,5

- Diagram indicating compressive strength (in %) achieved at standardized mortar in 2, 7, 28 days.
- Without Kheme Molt / With **Kheme Molt HT**

* **CEM II/B-L 32,5 N**
Clinker: 65 %
Limestone: 30%
Gypsum: 5%

BENEFITS of a real mill in West Africa

- Use of a single admixture that entails simplifying the facilities for its application.
- Depending on the factory's production.

  Factory with maximum production capacity
  -Equivalent to a 18% increase in the size of the factory without the need for investment.

  Factory with half the production capacity
  -Reduces 18% of the energy cost.
  -Possibility to reduce fixed costs.

- **Increased** mechanical strength between 16% and 40% at all stages.

KHEME CEM Technology

- **Kheme Cem** technology has special admixtures for special needs in cement quality or special cement applications in construction (special cements, concrete and mortar). These admixtures confer effects that improve the benefits of concrete and mortar required by regulations or for specific application needs.

- EFFECTS ON CEMENT

  Water demand **reducers**.

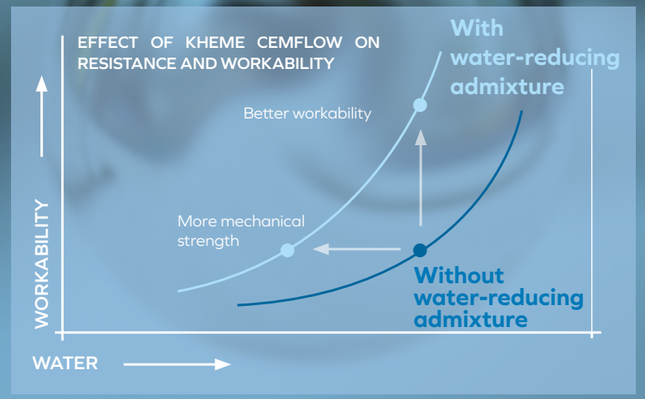
  Air **entrained agents**.

  Setting time **regulators**.

- **Kheme Cemflow** *(Water reducer)*
- **Kheme Cemair** *(Air entrained agent)*
- **Kheme Cemtard** *(Setting retarder)*
- **Kheme Cemfast** *(Setting accelerator)*

Kheme Cemflow *(Water reducer)*

Water demand **reducing** admixtures: Designed for the production of common or special cements where water demand needs to be reduced either to improve the benefits or to enable the use of additions with increased water absorption such as natural pozzolans.

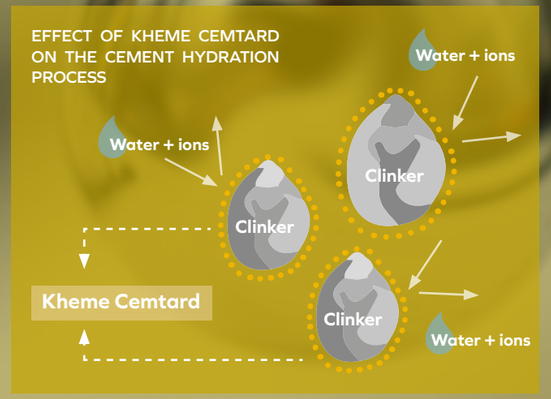


BENEFITS

- Increases the workability of cement, concrete and mortar mass.
- Increases the mechanical strength of mortar and concrete.

Kheme Cemtard *(Setting retarder)*

Setting retarder: Used in the cement manufacturing mill, are used in situations where it is necessary to decrease the setting rate of cement and it's not possible to achieve this with common cement regulators (gypsum, anhydrate, or other additions). This is also used for white cement where the available gypsum/anhydrate have impurities showing different colors or textures other than cement intended to be produced.



BENEFITS

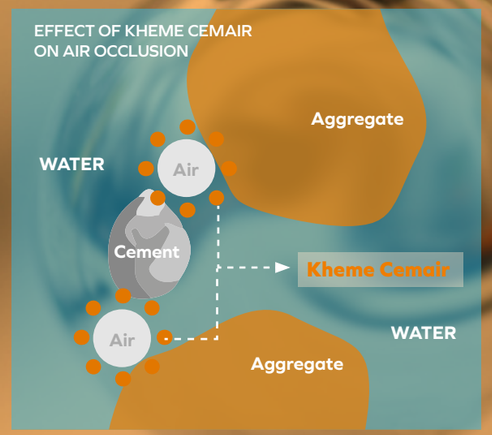
- The formation of sparsely soluble complexes or salts with metallic ions on the surface of particles hinder the entrance of water and the exchange of ions.

  Therefore, hydration is delayed.

- The sparsely soluble coating leads to a long workability of cement paste.

Kheme Cemair *(Air entrained agent)*

Air entrained admixtures are designed for the production of special cements such as masonry cements in order to increase the capacity to retain air in mortars and concrete were they are used. The use of air entrained admixtures offers workability and durability.

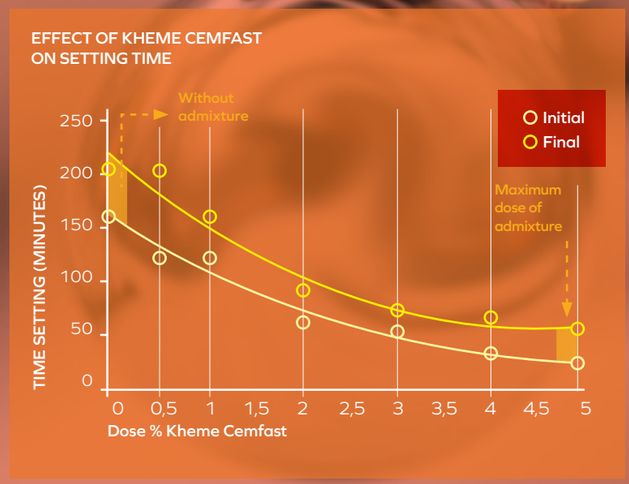


BENEFITS

- Improves stability of the air vacuum system.
- Improves the mixture cohesion and workability.
- Decreases the segregation / bleed.

Kheme Cemfast *(Setting accelerator)*

Setting Accelerators: Used in cement manufacturing mills are used in manufacturing situations where cements do not comply with setting technical requirements because of an excess of time caused by the chemical and intrinsic properties of the clinker and/or the used additions.



BENEFITS

- Its use allows more control of setting time in order to comply with the established requirements according to regulations.
- Special cement development for the use in precast industry.

Strategic location

For further information, please contact us

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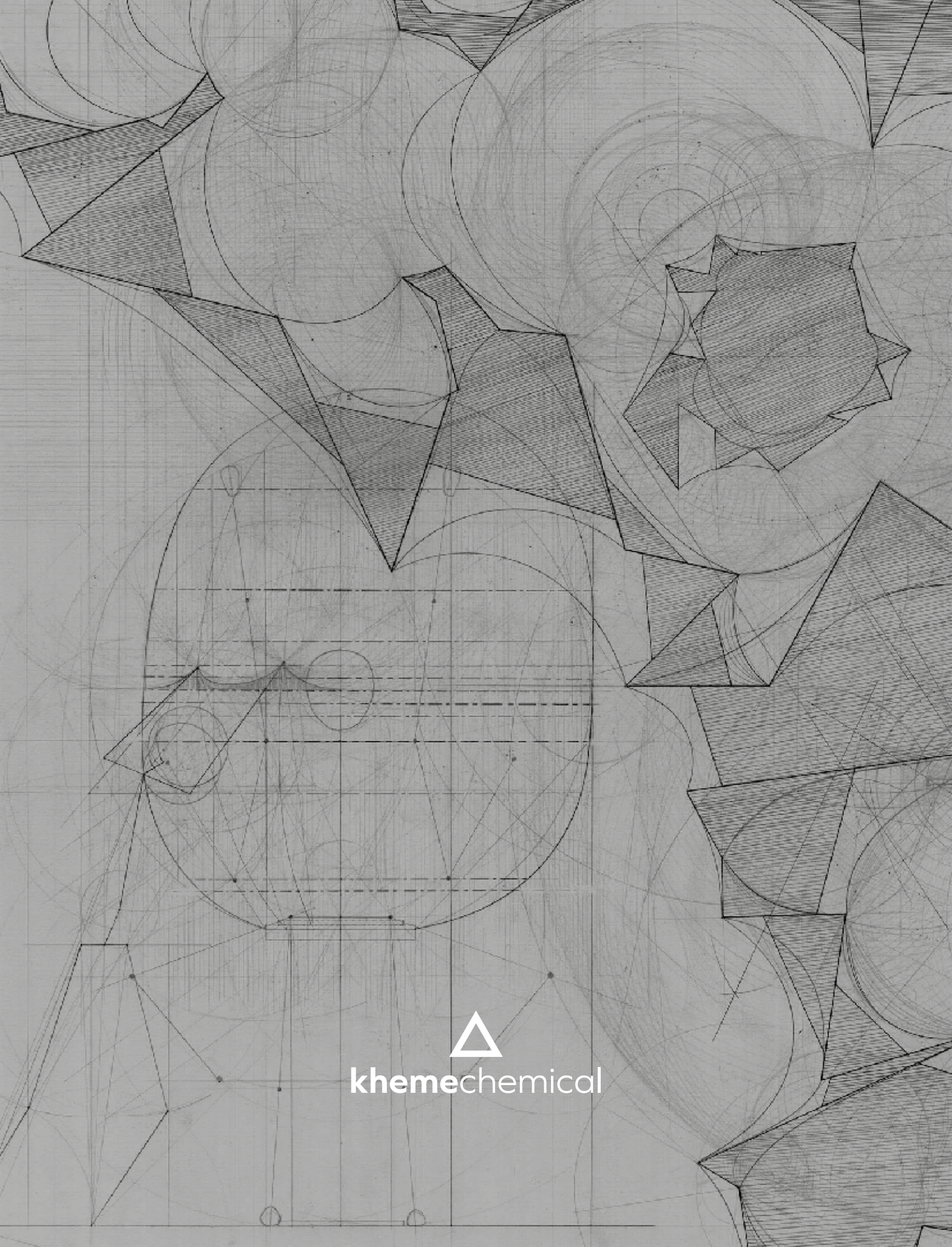
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