

HIGH-PERFORMANCE UV ALIPHATIC POLYURETHANE COATING

DESCRIPTION

MAGIECHEM® 142 is a high-solids aliphatic polyurethane topcoat, formulated to provide exceptional resistance to UV rays, weathering, corrosive environments, and pedestrian traffic. It retains its color and gloss even when exposed to harsh climatic conditions.

MAGIECHEM® 142 is designed to be used exclusively as a topcoat within the **MAGIEFLOOR™** multilayer systems, particularly over epoxy coatings, decorative quartz systems, vinyl flake systems, or monochrome finishes. Thanks to its aliphatic polyester urethane chemistry, the product offers excellent dimensional stability, high resistance to abrasion, moisture, chemicals, and long-lasting aesthetic performance.

Specialized versions are also available :

- **MAGIECHEM® 142** : Colored version available in multiple finishes (gloss, satin, or matte)
- **MAGIECHEM® 142 CLRL** : Clear version with gloss finish
- **MAGIECHEM® 142 CLRS** : Clear version with satin finish
- **MAGIECHEM® 142 CLRM** : Clear version with matte finish
- **MAGIECHEM® 142 AG** : Specialized version formulated for anti-graffiti, self-cleaning, and stain-resistant applications

The advanced formulation of **MAGIECHEM® 142** is based on a crosslinking technology developed and controlled in-house, combined with a targeted surface tension modification. This unique system allows the product to spread evenly over the substrate, ensuring seamless fusion between passes—even when applied with short-nap rollers. The result is a flawless finish with no lap marks, even with the matte version, eliminating one of the main challenges faced by applicators. **MAGIECHEM® 142** combines an extended working time with a fast cure, allowing for efficient application even under variable weather conditions.

MAGIECHEM® 142 can be used alone or in combination with anti-slip aggregates (such as **MAGIECHEM® 2550**) to increase traction or meet safety requirements in slip-prone areas. It must be integrated within the **MAGIEFLOOR™** system, as recommended by **MAGIECHEM®** technical representatives.

FIELDS OF APPLICATION

- **Types of buildings and environments :**
 - Factories, production workshops, and processing zones
 - Aircraft hangars, mechanical rooms, and warehouses
 - Commercial or industrial outdoor areas
 - Museums, cultural centers, and exhibition halls
 - Indoor areas with moderate to heavy traffic
- Laboratories, pharmaceutical centers
- Decorative coatings with high UV exposure
- Condominiums, balconies, and residential building terraces
- Sports centers, swimming pools, and recreational facilities

FEATURES / ADVANTAGES

- Seamless finish, waterproof, and easy to clean
- Outstanding UV stability, non-yellowing
- Excellent resistance to humidity and ambient condensation
- Superior UV resistance and long-term UV stability
- Maintains color and gloss of underlying layers
- Exceptional abrasion resistance
- Low VOC – ≤ 49 g/L
- Easy application with no roller marks
- Extended working time and fast cure
- Water-based formula – low odor and easy cleanup
- Compatible with **MAGIECHEM® 2550** anti-slip aggregates

CERTIFICATIONS / STANDARDS

- Tested standards (ASTM)
- Compliant with CFIA / USDA / ACIA standards for use in food processing facilities
- Compliant with LEED standards



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GENERAL INFORMATION

- **DCC MasterFormat®** : 09 67 00 | FLUID-APPLIED FLOORING
- **Color** : Clear Gloss, Clear Satin & Clear Matte
- **Packaging** :
 - 11.34 L (3 gal US)
 - 56.78 L (15 gal US)
- **Mixing Ratio** : 2A : 1B (by volume)
- **Pot life** : 60 min (0.5 kg at 22 °C)
- **VOC** : ≤ 49 g/L
- **Shelf life** : (12 months between 12-30 °C)
- **Recommended storage conditions** : Store in a dry area between 12 °C and 32 °C (54 °F and 89 °F)

TECHNICAL INFORMATION

Physical Properties	Results	Standard / Method
Compressive strength	Coming soon	ASTM D695
Flexural strength		ASTM D790
Tensile strength		ASTM D638
Elongation percentage		ASTM D638
Adhesion to concrete		ASTM D4045
Shore D hardness		ASTM D2240
Impact resistance		ASTM D3029
Abrasion resistance		ASTM D4060
Thermal linear expansion coefficient		ASTM C531
Coefficient of friction – Dry surface Coefficient of friction – Wet surface		ASTM C1028
Water absorption (1 day at 23 °C) Water absorption (7 days at 23 °C) Water absorption (2 hours in boiling water)		ASTM D570



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INSTRUCTIONS FOR USE

SURFACE PREPARATION

Before any application, it is imperative to ensure that the substrate is clean, sound, porous, and fully compatible with the intended coating system. **MAGIECHEM® 142** is specifically designed to be applied directly to bare concrete without the need for a primer. It is designed to be used as a base coat and as a topcoat over an existing epoxy coating or a multilayer system from the **MAGIEFLOOR™** line.

If concrete is the base substrate for the project, **MAGIECHEM® 142** should never be applied directly—even when primed. It must first be covered with a complete **MAGIECHEM® MAGIEFLOOR™** epoxy system prior to applying the **MAGIECHEM® 142** topcoat. The concrete must also be at least 28 days old, structurally sound, and free from any surface contamination such as oil, grease, wax, paint, dust, curing agents, release agents, laitance, or any residue that could affect the adhesion of the base system.

IMPORTANT : **MAGIECHEM® 142** must never be applied directly onto concrete. It is strictly designed to be used as a topcoat over pre-installed coating systems (e.g., epoxy, quartz, or flake systems).

An **adhesion test** is strongly recommended when there is any doubt regarding the quality of surface preparation or the condition of the existing multilayer system. Poor surface preparation is the leading cause of coating system failure.

CONCRETE MOISTURE

Concrete moisture must be measured using a direct reading moisture meter (Tramex® CME or preferably CMEX5). On a mechanically prepared slab:

- If the moisture content is $\leq 4\%$ (by weight), the system can be applied directly.
- Between 4% and 5%, the use of **MAGIECHEM® 975** or **MAGIECHEM® 5076** primer is mandatory, acting as a vapor barrier.
- If moisture exceeds 5%, **MAGIECHEM® 5087** must be used, specifically formulated for highly humid or freshly poured substrates. (Usage must be confirmed with a **MAGIECHEM®** technical representative before using **MAGIECHEM® 5087** or **MAGIECHEM® 701**.)

For projects with specific requirements, ASTM F2170 can be used to measure internal relative humidity. In such cases, readings must be $\leq 85\%$ RH.

RECOAT WINDOW

MAGIECHEM® coatings have a specific recoat window between two layers. In order for **MAGIECHEM® 142** to be applied as a topcoat, it is essential to follow the specific time frame of the base product (typically between 4 and 24 hours at 22 °C — to be confirmed with the technical data sheet of the underlying product). Beyond this period, the existing layer must be :

- Lightly sanded to remove all gloss or sheen
- Vacuumed thoroughly using an industrial vacuum
- Cleaned with a suitable solvent (**MAGIECHEM® 4040**, **MAGIECHEM® 4050**, or another approved solvent recommended by a technical representative) to remove dust and re-activate the surface
- Re-activated using a **MAGIECHEM® ACTIVATOR**, under the recommendation of a technical representative

The activator must be fully evaporated before applying the next coat.

APPLICATION CONDITIONS

Successful application depends greatly on environmental conditions. All the following parameters must be strictly respected :



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- Ambient temperature: minimum 10 °C (50 °F), maximum 30 °C (85 °F)
- Substrate temperature: minimum 10 °C (50 °F), maximum 30 °C (85 °F)
- Product temperature: between 18 °C and 30 °C (65 °F to 86 °F) before mixing
- Air relative humidity: maximum 85%
- Dew Point: The substrate must be at least 3 °C above the dew point.

Temperatures below 18 °C reduce workability, slow down curing, and may lead to appearance defects. Higher temperatures accelerate the exothermic reaction, reduce pot life, shorten working time, and may cause issues such as bubbling, craters, or color variation.

MIXING

The product is supplied in pre-measured kits of 3 US gallons or 15 US gallons, with a volumetric mixing ratio of A:B = 2:1. Do not split components unless using a precision volume scale.

Before mixing, homogenize Part A at low speed to fully redistribute the pigments. Then pour Part B into Part A and mix for a **minimum of 3 minutes** using a mechanical mixer (Exomixer® type) **at 300–450 RPM**, ensuring to scrape the sides and bottom of the container thoroughly. Never mix by hand. Do not allow the bucket to drain onto the substrate. Do not use the mixture if it has hardened or heated inside the container.

Pot life : approximately **60 minutes** at 22 °C. Do not let the product react in the bucket for more than 3 minutes.

APPLICATION OF COATS

The product can be applied in multiple system types :

- Smooth uniform finish (without aggregates)
- Clear glossy, clear matte, and clear semi-gloss finish
- Finish with broadcast or full saturation aggregates
- Compatible with **MAGIEFLOOR™** systems

COVERAGE (W.F.T.)

• Wear coat (finishing layer) :

4 to 5 mils (102 to 127 microns w.f.t.), estimated coverage is 320 to 400 sq.ft./US gal (≈ 7.87 to 9.83 m²/L), depending on the application method used (smooth, full broadcast, etc.).

• Refurbishment coat (maintenance layer) :

Expect the same coverage as the wear coat, i.e. 320 to 400 sq.ft./US gal (≈ 7.87 to 9.83 m²/L), depending on the specific site requirements.

ADDITIONAL IMPORTANT INFORMATION

The application rates provided may vary significantly depending on the **substrate's surface profile, porosity, application method**, or the **desired finish type**.

The use of **light or highly pigmented colors** (white, yellow, red, etc.) over dark substrates may require additional coats or adjusted film thickness **to achieve proper opacity**.

On-site testing is strongly recommended to validate actual coverage rates and adjust the system to the project's real-world conditions.



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INSTRUCTIONS FOR USE

DRYING AND CURING TIME

Temperature	Recoat (min/max)	Light traffic	Full cure
22 °C / 72 °F	~4-24 h	~24 h	~28 days

RESTRICTIONS

- Do not apply in direct sunlight or on warming slabs
- Do not apply if condensation is present or imminent
- Do not apply on frozen surfaces or if temperature is below 3 °C
- Never apply more than one coat
- Do not exceed 7 mils in a single coat
- Do not wash the surface within 7 days after application
- Never apply directly to concrete
- Avoid exposure to vapor or humidity during the first 24 hours following application
- Do not apply on unprotected, uncovered, or unprimed exterior surfaces directly exposed to freeze/thaw cycles

ENVIRONNEMENT, SANTÉ ET SÉCURITÉ

Lire la **Fiche de Données de Sécurité (MSDS)** avant utilisation. Porter un **masque à vapeur organique**, des **gants nitrile** et une **ventilation adéquate** durant tout le processus. Ne pas fumer ou consommer d'aliment sur les zones d'application. En cas de contact avec la peau ou les yeux, rincer immédiatement à grande eau et consulter un médecin. La **MSDS** fournit des informations et des conseils sur la manipulation, le stockage et l'élimination sécuritaire des produits chimiques et contient des données physiques, écologiques, toxicologiques et d'autres données relatives à la sécurité.

APPLICATION INSTRUCTIONS

APPLICATION

Application must be carried out in a **strictly controlled environment**, in compliance with temperature, relative humidity, and dew point parameters. **MAGIECHEM® 142** is applied using standard tools such as an **epoxy roller**, **notched squeegee**, and/or **brush**, depending on the desired finish (smooth, textured, or aggregate broadcast).

Each coat must be applied **evenly and continuously**, without marks or excessive build-up. It is essential to respect the recoat window between layers (minimum 16 h, maximum 48 h at 22 °C).

If this window is exceeded, the surface **must be mechanically sanded to completely eliminate the gloss**. The existing coating **should appear matte, uniformly whitened and visibly abraded**, indicating sufficient roughness for the next coat to adhere. After sanding, remove all dust with an industrial vacuum, then activate the surface using a suitable solvent (e.g., **MAGIECHEM® 4040** or **MAGIECHEM® 4050**), followed by a **MAGIECHEM® ACTIVATOR** as per technical recommendations. Please contact your **MAGIECHEM®** technical representative to confirm the appropriate activator and method for the specific jobsite.



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CLEANING & MAINTENANCE

CLEANING

All application tools and equipment **must be cleaned immediately after use**, before the product begins to harden.

Only solvents recommended by **MAGIECHEM®**, such as **MAGIECHEM® 4040** or **MAGIECHEM® 4050**, should be used to remove fresh residues. Once cured, the product can only be removed by mechanical means (e.g., grinding or sanding).

Avoid discharging liquid residues into drains or the environment without prior treatment, in accordance with local waste management regulations

MAINTENANCE

To maintain long-term performance of the coating system, regular and structured maintenance is essential.

MAGIECHEM® recommends keeping a maintenance log specifying cleaning frequencies, approved cleaning methods, and compatible maintenance products.

The use of aggressive detergents, abrasive tools, or unapproved solutions may alter the coating finish.

A complete maintenance guide is available upon request from your MAGIECHEM® representative. This guide provides recommendations for daily cleaning, periodic maintenance, and refurbishment in case of surface damage or advanced wear.

In the case of localized damage, a repair protocol using compatible products can be provided.

LOCAL RESTRICTIONS

Please note that certain regulatory requirements may vary by region. Depending on local laws or environmental and safety standards (e.g., VOC limits, fire safety, public or government infrastructure), some technical data or usage conditions may be subject to change. It is recommended to consult the local version of the technical data sheet or contact local authorities to confirm product applicability in your area.

TECHNICAL SERVICES AND WARRANTY

This technical data sheet has been prepared to provide the most accurate and useful information regarding the use of the MAGIECHEM product, as tested in laboratory conditions at 22°C and 50% relative humidity. All data, recommendations, and guidelines contained in this document are based on tests considered reliable and representative by MAGIECHEM, carried out in a controlled environment. However, MAGIECHEM cannot guarantee identical results on site due to the variability of real-world application conditions, which are beyond our control. The user is solely responsible for verifying product compatibility with their project, adhering to the application conditions described in this sheet, and performing the necessary preliminary tests in accordance with applicable standards. In case of doubt, a MAGIECHEM technical representative should be consulted. For large-scale projects, defined as surfaces equal to or greater than 2000 ft², the user or applicator must keep a detailed jobsite log documenting each stage of the project. This log should include, at minimum: start and end times of mechanical surface preparation (shot blasting, grinding), type of diamond or abrasive used, concrete moisture readings with time and location, start and end time of each applied coat, application method used, any interruptions, ambient conditions, on-site adjustments, scraping or sanding operations, and any other information useful for tracking the system installation. This log will be required for any claim related to large projects. MAGIECHEM guarantees that its products are free from manufacturing defects and comply with technical specifications in effect at the time of manufacturing. MAGIECHEM's liability is strictly limited to the replacement of the product proven to be defective, following a technical evaluation by our department. No other warranties – express or implied – including fitness for a particular purpose or merchantability, are applicable. MAGIECHEM assumes no responsibility in cases of improper surface preparation, non-compliant application, misuse, inadequate maintenance, or site conditions beyond our control; nor for visual defects such as yellowing, staining, shrinkage, cracking, peeling, or color variation; nor for any indirect damages, material loss, labor costs, delays, or downtime. MAGIECHEM shall not be held liable for product use in combination with third-party materials unless previously approved in writing, nor for performance deviations due to non-compliance with this technical data sheet or recoat windows. Any claim must be submitted in writing within ten (10) business days following the discovery of the defect, accompanied by proof of purchase, batch number, and a complete description of the application conditions. If third-party analysis is required, it will be carried out at the user's expense. MAGIECHEM reserves the right to inspect the site conditions before approving any replacement. MAGIECHEM also reserves the right to modify formulations, installation instructions, or technical data at any time without prior notice. The use of this product constitutes full and unconditional acceptance of the terms stated in this technical data sheet.

