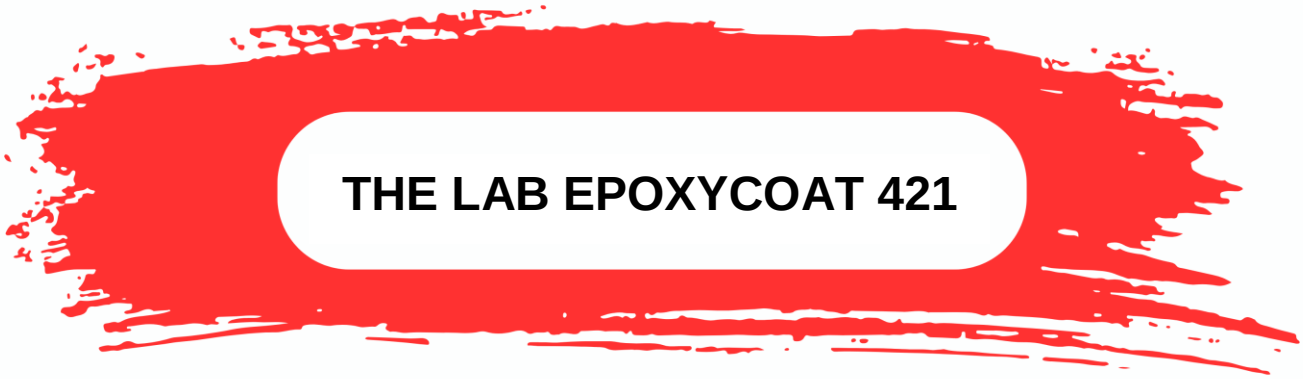
THE LAB®

Chemicals & Coatings

Technical and Material Safety Data Sheet

Version: 2026



THE LAB EPOXYCOAT 421
Product Family: Twin Packs and Epoxies (High Solids Epoxy Coating)

Typical System Guidance

For cementitious substrates, a primer coat of **THE LAB EPOXY PENETRATING PRIMER** should be applied at approximately **60 µm dry film thickness** to seal the substrate and promote adhesion. Once the primer has cured, **two coats of THE LAB EPOXYCOAT 421** are typically applied at approximately **250 µm dry film thickness per coat** to provide a durable protective barrier. Where enhanced UV resistance, colour retention or decorative finish is required, the system may be completed with **two coats of THE LAB POLYGUARD** at approximately **60 µm dry film thickness per coat**, depending on the desired finish.

For steel substrates, a primer coat of **THE LAB EPOXY ZINC PHOSPHATE PRIMER** should be applied at approximately **250 µm dry film thickness**. Once cured, the system may be finished with **two coats of THE LAB POLYGUARD** at approximately **60 µm dry film thickness per coat**, depending on the desired finish and service environment.

Product Description

THE LAB Epoxycoat 421 is a high solid modified epoxy coating designed to provide a durable, abrasion-resistant protective finish for industrial floors and structural surfaces. The coating forms a hard, chemically resistant film capable of withstanding exposure to oils, petroleum products, dilute acids and alkaline environments. It is formulated to deliver excellent adhesion to concrete, cementitious surfaces, steel and aluminium while providing a smooth, easily cleaned finish. The coating is widely used in industrial and commercial facilities where durability, chemical resistance and mechanical strength are essential. For applications where improved UV resistance and aesthetic

appearance are required, the system may be over coated with a compatible polyurethane finish such as **THE LAB POLYGUARD.**

For applications where improved UV resistance and long-term colour retention are required, overcoat with **THE LAB POLYGUARD** polyurethane coating.

Technical Data Summary

Solids by Volume	87%
Colour	Pastel and Limited Deep Colours
Specific Gravity	+/- 1.5 kg/L
Mixing Ratio	4 : 1 (Base : Activator)
Spread Rate	+/- 4–6 m²/L
Flexibility	Good
Recommended DFT	250 microns
Surface Dry	+/- 4 hours
Hard Dry	+/- 16 hours at 25°C
Pot Life	+/- 2 hours at 20°C
Induction Time	+/- 10 minutes
Overcoating Time	15°C: minimum 20 hours / 30°C: minimum 6 hours
Full Cure	7 days
Flash Point	35 °C +/-2
Application Temperature Limits	10 – 40 °C
Relative Humidity Limits	< 85°C
Storage Temperature	+5°C – 25°C
Shelf Life	+/- 24 months when stored under correct conditions
Cleaning	Epoxy Thinners

These values are typical laboratory results and serve as a guide only. Practical coverage will vary depending on surface profile, porosity and application method.

Intended Uses

THE LAB EPOXYCOAT 421 is intended for use as a high-performance protective coating for concrete, cementitious mortars and renderings, epoxy mortars, steel and aluminium substrates. It is suitable for workshops, showrooms, bottling plants, kitchens, factories, warehouses, car parks and other commercial or industrial environments where a hard-wearing, chemically resistant and easily maintained finish is required.

The product is designed for use in normal to aggressive service environments and may be used as a protective lining for storage tanks, silos and bund areas that are not intended for direct contact with food, beverages or potable water.

- bottling plants
- showrooms

- storage tanks
- silos
- bund walls

Chemical Resistance

THE LAB EPOXYCOAT 421 exhibits good resistance to most dilute acids and alkalis, petroleum products, oils and salt water. Chemical resistance may vary depending on concentration, temperature, exposure duration and service conditions.

Performance and Durability

• Hard-wearing and abrasion resistant
• High-gloss decorative finish
• Excellent chemical resistance
• Durable industrial-grade protection
• Good adhesion to suitably prepared substrates
• Suitable for heavy-duty commercial and industrial applications

Principal Characteristics

- High solids epoxy coating with excellent durability
- Superior abrasion resistance for industrial environments
- Resistant to oils, fuels and petroleum products
- Resistant to dilute acids, alkalis and salt water
- Smooth, hard and easy-to-clean finish
- Excellent adhesion to concrete, steel and aluminium
- Suitable for aggressive industrial environments
- Compatible with polyurethane topcoats for UV protection
- Compatible with polyurethane topcoats for improved UV resistance.

Surface Preparation

All surfaces must be clean, dry, mechanically sound and free from contaminants including dust, dirt, oil, grease, curing compounds, existing coatings and other materials that may impair adhesion. Different substrates and service environments may require specific preparation methods and coating systems. Where uncertainty exists, consultation with a The Lab representative is recommended prior to application.

Concrete substrates must be structurally sound with a minimum compressive strength of 25 N/mm^2 and minimum pull-off strength of 1.5 N/mm^2. Substrates should be prepared mechanically using abrasive blasting, grinding or scarifying equipment to remove laitance and achieve an open-textured surface profile. Weak or unsound concrete must be removed and defects such as blowholes, voids and surface irregularities repaired using suitable materials from The Lab product range. High spots should be removed by grinding to achieve a uniform surface profile.

All dust, loose and friable material must be completely removed prior to application, preferably by industrial vacuum equipment.

Steel surfaces must be blast cleaned to a minimum standard of Sa 2½ (ISO 8501-1) or SSPC-SP10 to remove rust, mill scale, weld spatter and other contaminants. An average surface profile of Rz > 50 µm should be achieved to promote optimum coating adhesion.

Aluminium surfaces should be sweep blasted to achieve a suitable surface profile. An average surface profile of Rz > 50 µm should be achieved and all contaminants detrimental to adhesion must be removed prior to coating application.

Where substrate suitability is uncertain, a test area should be completed before proceeding with full-scale application.

Remove laitance by abrasive blasting or grinding.

Application Guidelines

THE LAB Epoxycoat 421 is supplied as a two-component system consisting of a base component and curing agent. The components must be mixed in a ratio of four parts base to one part activator. Thorough mechanical mixing is required to achieve a homogeneous mixture. After mixing, allow an induction period of approximately ten minutes before application.

Prior to application, always follow these basic product checks:

- Inspect packaging and ensure containers are sealed, undamaged and within shelf-life
- Open product and visually inspect for abnormalities, contamination, skinning or separation
- Stir product thoroughly before and during use where required
- For multi-component products, ensure correct mixing ratios and induction periods are followed
- Confirm substrate condition, moisture levels and environmental conditions are suitable
- Conduct a small test patch to confirm adhesion, appearance and compatibility prior to full application

The coating may be applied using brush, roller or spray equipment. Spray application may require thinning with The Lab Epoxy Thinner where recommended.

Substrate temperature must be above 10°C and at least 3°C above the dew point to prevent condensation. Adequate ventilation must be maintained during application and curing.

Do not apply when:

- Ambient temperature is below 10°C
- Rain or moisture exposure is imminent
- Surfaces are wet, contaminated or subject to condensation
- Environmental conditions fall outside recommended application parameters

Maintain recommended spreading rates to achieve the specified film thickness and allow adequate drying and curing time between coats.

Storage

Store in original sealed containers between 5°C and 25°C in a dry and well-ventilated environment. Protect from direct sunlight, moisture and extreme temperatures. When stored correctly the product has a typical shelf life of 12 months from date of manufacture.

Technical Advisory, Specification Support and Disclaimer

The technical information, recommendations, specifications and system guidance contained in this document are provided in good faith and are based on laboratory testing, field experience and current product knowledge available at the date of publication. Such information is intended solely to assist specifiers, contractors, applicators and end users in selecting and applying suitable coating systems and does not relieve any party from independently assessing product suitability for the intended application and site conditions.

The performance of any coating system is materially dependent upon factors beyond the control of The Lab Chemicals & Coatings, including but not limited to correct substrate assessment, cleaning and decontamination procedures, surface preparation, substrate condition, moisture content, environmental conditions, product storage and handling, mixing procedures where applicable, film thickness achievement, adherence to specified system build requirements, application techniques and ongoing maintenance practices.

Failure to strictly follow the instructions, specifications, limitations and recommendations contained within this Technical Data Sheet, associated specifications, written recommendations or supplementary documentation may adversely affect product performance and may invalidate performance expectations, warranties or related claims.

Users are strongly advised to conduct suitability trials and test applications under actual site conditions prior to full-scale application.

To the best of our knowledge, the information contained herein is true and accurate at the date of issue and remains subject to change without prior notice. Users are advised to contact The Lab Chemicals & Coatings prior to specification or ordering to ensure that the correct product and system are selected for the intended application.

No guarantee, representation or warranty is given or implied regarding the completeness or suitability of information contained herein. Technical recommendations and advice do not constitute a performance guarantee unless expressly confirmed in writing by an authorised representative of The Lab Chemicals & Coatings.

The Lab Chemicals & Coatings accepts no responsibility or liability for product failure, defects, damage, consequential losses, injuries or unsatisfactory performance arising from incorrect substrate preparation, unsuitable application conditions, deviation from specified system requirements, misuse, unauthorised product modification, incorrect application methods or use outside documented recommendations. Liability, if any, shall be limited solely to replacement of proven defective product.

The above information must be read in conjunction with the General Terms and Conditions of The Lab Chemicals & Coatings (Pty) Ltd and The Lab George (Pty) Ltd, available at: www.thelabcc.co.za or upon request.

Material Safety Data

ACTIVATOR

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION
CAS no. : N/A
EC no. : N/A
UN No. : 1866 Hazchem: 3[Y]
SAPMA: 2-H-E
In emergency contact: The Lab Chemicals & Coatings @ 0845071767

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS
[- R10][Xi R43]
EC Classification: - Xi R10,43 S02,13,24,37,43A,46
HAZARDOUS AND/OR OTHER RELEVANT COMPONENTS
XYLENE >12.5%
[CAS #: 1330-20-7] [E.C. #: 601-022-00-9]
EEC Labels: XN OEL 435mg OEL 100ppm STOEL 650.mg STOEL 150.ppm RL+ S
LIQUID EPOXY RESIN M.Wt <700 >1%
[CAS #: NQ] [E.C. #:]
EEC Labels: XI
N-BUTANOL <5%
[CAS #: 71-36-3] [E.C. #: 603-004-00-6]
EEC Labels: XN OEL 15Omg OEL 50ppm STOEL 150mg STOEL 50ppm RL S
SABUTOL - NOW CALLED BUTYLOL <5%
[CAS #: 71-36-3] [E.C. #: 603-004-00-6]
EEC Labels: XN OEL 15Omg OEL 50ppm STOEL 150mg STOEL 50ppm RL S
(CL/RL = Controlled/Recommended level 'S' = Skin annotation)

SECTION 3. HAZARDS IDENTIFICATION
SAPMA Health Rating: 2-MODERATE - Temporary or minor injury possible even if treatment given
Inhalation: Irritating, narcotic. Can affect CNS.
Skin: HARMFUL BY CONTACT. Potential sensitizer.
Eyes: Irritating.
Ingestion: Irritating and nauseating.
No carcinogenic, mutagenic or genetic effects established
May have short term environmental effects. Contain, monitor & remove.
Skin Sensitizer

SECTION 4. FIRST AID MEASURES
Inhalation: Move to fresh air. In case of discomfort seek medical attention.
Skin: Use hand cleaner/soap & water. Remove contaminated clothing. If any discomfort get medical attention
Eyes: Rinse immediately with plenty of water. Seek medical advice if symptoms persist.
Ingestion: Wash mouth with plenty of water. Do NOT induce vomiting. Seek medical attention.

SECTION 5. FIRE FIGHTING MEASURES
Flammable with toxic fumes.
Containers liable to burst in a fire.
Foam. CO2. Dry powder. Fog to cool and control. Do NOT use water jets.

SECTION 6. ACCIDENTAL RELEASE MEASURES - SEE ALSO SECTIONS 5, 8, 13

Contain & collect. Use an inert - NOT sawdust. Keep out of drains & sewers.

SECTION 7. HANDLING AND STORAGE
Store separately from any reactive substances - oxidisers in particular.
No open flames. No smoking.
Store containers with due care in case of fire.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
SAPMA Rating: 2-H-E PPE: Respirator and Eye protection
Inhalation: In case of insufficient ventilation, use suitable respiratory protection.
Skin: Avoid direct contact. Use barrier cream and impervious gloves.
Eyes: Use face shield & goggles or full face respirator/hood. Avoid direct contact.
Ingestion: Observe the rules for hygiene. Wash before eating, drinking or smoking.
OEL Type: Mix- Mixture - See Section 2 Skin annotation
Skin Sensitizer

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES
Chemical class: e.g.: Paint Product Description: Viscous liquid
Smell: Pungent
Boil. pt: >35
FlashPoint: >23

SECTION 10. STABILITY AND REACTIVITY
Stable under normal conditions
Could generate static - USE EARTHING
Inert - no reaction with fire-fighting water

SECTION 11. TOXICOLOGICAL INFORMATION
No carcinogenic, mutagenic or genetic effects established

SECTION 12. ECOLOGICAL INFORMATION
May have short term environmental effects. Contain, monitor & remove.

SECTION 13. DISPOSAL INFORMATION
Hazardous. Use reputable waste disposal contractors. Destroy used containers.

SECTION 14. TRANSPORT INFORMATION
UN no: 1866 Packing group: III IMO Class: 3.3
Hazchem: 3[Y]

SECTION 15. REGULATORY INFORMATION
EC no. : N/A Contains: XYLENE
EC Classification: - Xi R10,43 S02,13,24,37,43A,46
R10 - Flammable

R43 - May cause sensitisation by skin contact
S2 - Keep out of reach of children. (Retail sales items)
S13 - Keep away from food, drink and animal feeding stuffs
S24 - Avoid contact with the skin
S37 - Wear suitable gloves
S43A - In case of fire, use water fog, foam or powder - Do not use water jets!
S46 - If swallowed seek medical advice immediately and show this container or label

SECTION 16. OTHER INFORMATION
THIS SUBSTANCE IS A POTENTIAL SENSITISER - ENSURE PRECAUTIONS ARE TAKEN.
IN CASE OF ANY DISCOMFORT ALWAYS SEEK MEDICAL ADVICE.

ACTIVATOR

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION
CAS no. : N/A
EC no. : N/A
UN No. : 1760
APMA: 2-H-C
In emergency contact: The Lab Chemicals & Coatings @ 0845071767

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS
[Xn R21/22][Xi R34][Xi R43][,N R52/53]
EC Classification : Xn,Xi, N R21/22,34,43,52/53 S36/37/39,37/39,02,13,46,56,59
Skin annotation
HAZARDOUS AND/OR OTHER RELEVANT COMPONENTS
ISOPHORONEDIAMINE (IPD) >25%
[CAS #: 2855-13-2] [E.C. #: 612-067-00-9]
EEC Labels: C
LIQUID EPOXY RESIN M.Wt <700 >1%
[CAS #: NQ] [E.C. #:]
EEC Labels: XI
TRIMETHYL TETRADIAMINE (TMD) _ >10%
[CAS #: N.E.] [E.C. #:?]
EEC Labels: C
(CL/RL = Controlled/Recommended level 'S' = Skin annotation)

SECTION 3. HAZARDS IDENTIFICATION
SAPMA Health Rating: 2-MODERATE - Temporary or minor injury possible even if treatment given
Inhalation: Irritating, narcotic. Can affect CNS.
Skin: HARMFUL BY CONTACT. Potential sensitizer.
Eyes: Corrosive. Damage possible.
Ingestion: Corrosive.
No carcinogenic, mutagenic or genetic effects established

May cause undesirable effects to aquatic organisms.
Skin Sensitizer

SECTION 4. FIRST AID MEASURES
Inhalation: Move to fresh air. In case of discomfort seek medical attention.
Skin: Use hand cleaner/soap & water. Remove contaminated clothing. If any discomfort get medical attention
Eyes: ACT FAST! - Rinse immediately with plenty of water and refer to doctor immediately.
Ingestion: Wash mouth with plenty of water. Do NOT induce vomiting. Refer immediately to Doctor.

SECTION 5. FIRE FIGHTING MEASURES
Combustible with toxic fumes.
Containers liable to burst in a fire.
Foam. CO2. Dry powder. Fog to cool and control. Do NOT use water jets.

SECTION 6. ACCIDENTAL RELEASE MEASURES - SEE ALSO SECTIONS 5, 8, 13
Contain & collect. Use Inert NOT sawdust. Keep waste separate for disposal.

SECTION 7. HANDLING AND STORAGE
Store separately from any reactive substances - oxidisers in particular.
No open flames. No smoking.
Store containers with due care in case of fire.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
SAPMA Rating: 2-H-C PPE: Eye protection
Inhalation: In case of insufficient ventilation, use suitable respiratory protection.
Skin: Avoid direct contact. Use barrier cream and impervious gloves.
Eyes: Use face shield. Avoid direct contact.
Ingestion: Observe the rules of hygiene. Wash before eating, drinking or smoking.
Skin annotation
Skin Sensitizer

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES
Chemical class: e.g.: Paint Product Description: Viscous liquid Smell: Pungent
FlashPoint: >61

SECTION 10. STABILITY AND REACTIVITY
Stable under normal conditions
Could generate static - USE EARTHING
Inert - no reaction with fire-fighting water

SECTION 11. TOXICOLOGICAL INFORMATION
No carcinogenic, mutagenic or genetic effects established

SECTION 12. ECOLOGICAL INFORMATION
May cause undesirable effects to aquatic organisms.

SECTION 13. DISPOSAL INFORMATION
Hazardous. Use reputable waste disposal contractors. Destroy used containers.

SECTION 14. TRANSPORT INFORMATION
UN no: 1760 Packing group: III IMO Class: 8

SECTION 15. REGULATORY INFORMATION
EC no. : N/A Contains: ISOPHORONEDIAMINE (IPD)
EC Classification : Xn,Xi, N R21/22,34,43,52/53 S36/37/39,37/39,02,13,46,56,59
R21/22 - Harmful in contact with the skin and if swallowed
R34 - Causes burns
R43 - May cause sensitisation by skin contact
R52/53 - Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection
S37/39 - Wear suitable gloves and eye/face protection
S2 - Keep out of reach of children. (Retail sales items)
S13 - Keep away from food, drink and animal feeding stuffs
S46 - If swallowed seek medical advice immediately and show this container or label
S56 - Do not discharge into drains or the environment; dispose to an authorised waste collection point
S59 - Refer to manufacturer/supplier for information on recovery/recycling

SECTION 16. OTHER INFORMATION
THIS SUBSTANCE IS A POTENTIAL SENSITISER - ENSURE PRECAUTIONS ARE TAKEN. IN CASE OF ANY DISCOMFORT ALWAYS SEEK MEDICAL ADVICE.

This MSDS conforms to General Administrative Regulations of 6 Sept.1996 (ISO-11014/ANSIZ400.1.1996)
OELs derived from OHS Act Regulations for Dangerous Chemical Substances of 25 Aug.1995 (EH-42)
SAPMA Rating - South African Paint Manufacturers Association Guide to Health Hazards (SABS ARP 006:1991) all information is given in good faith but without guarantee in respect of accuracy. No responsibility is accepted for errors or omissions or the consequences thereof.