Paul Gothe GmbH
Emission Control Technology
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Fortafix CHROMIX

A cold setting dense, white, water based ceramic paste. **CHROMIX Grade** is ideal for bonding, assembling, sealing, jointing or repairing glass, ceramics, metals, asbestos, quartz, steatite etc. Fortafix CHROMIX possesses excellent adhesive, thermal, electrical and mechanical properties.
Maximum continuous **working temperature is 1500° C.**

Suitable for:

Thin films/Coating	Yes	Thick Sections	No
Bonding	Yes	Potting/Encapsulation	No

Characteristics

Property	***Value***	**Property**	***Value***
Softening °C	*1400°C*	Melting °C	*>1600°C*
Shelf Life	*12 months*	Packaging	*250 ml, 1 litre, 5 litre, 25 litre container or other to special order.*

Application & Curing:

Application.
IT IS ESSENTIAL THAT ALL SURFACES TO BE BONDED ARE FREE FROM OIL, DUST OR ANY FORM OF SURFACE COATING OR CONTAMINATION.

- Stir contents of the container prior to use, to overcome the effects of any settlement of the contents during storage.
- Ensure that all surfaces to be bonded sealed or insulated, are degreased, clean and free from contamination.
- A light surface abrasion of the material to be bonded will increase the amount of surface area available for adhesion and will give improved mechanical key.
- Apply the adhesive to all surfaces to be bonded.
- Join and apply moderate pressure to ensure even anchorage and solid contact of the surfaces to be bonded, ensure that all surface are fully wetted by the adhesive.
- Secure the components and allow the adhesive to set and harden.

Curing.
This product is water based. In order to cure of the material it is necessary to fully dry & dehydrate the adhesive, **by heating as gently & progressively as time and circumstances will allow.** The ease by which full curing can be achieved is dependant on the porosity of the substrate, as well as the amount of available surface through which the adhesive film can dry.

The cement should be allowed to harden for at a minimum air temperature of 20°C until initial set has taken place. After this period the hardening process may be accelerated using the following typical schedule;

- Heat from 20° to 80°C @ 4°C per minute (15 minutes). Hold for 10-20 minutes
- Heat from 80 to 140°C @ 2°C per minute (30 minutes). Hold for 120-180 minutes
- Heat from 140 to 200°C @ 0.2°C per minute (300 minutes).
- Above 200°C - raise temperature @ 1°C per minute to required temperature, allow to cool progressively.

Hardening and curing times given are approximate in view of possible variations in adhesive volume, glue line thickness, and substrate conditions, all of which will influence curing times.

! Attention, the material is alkaline (ca. PH 12). Avoid contact with skin and eyes. In case of clip, get in contact with doc.

Thermical severe test:

Gird in cement

heat red temperature.

Blistered cement through water vapour (no curing was done) but without influence on the stability

Non-destructive removal of the ceramics by destroying the cement.

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Section 1. Chemical Product & Company Identification.

Product Name **Fortafix - CHROMIX.**

Synonyms

Supplier Paul Gothe GmbH
Phone: +49 +234-335180 Fax: +49 +234-308217

Intended Use of Product High temperature resistant adhesive.

Section 2. Composition & Information on Ingredients as Supplied

Ingredient	*Contents % b/w.*	*CAS No.*	*E.C. Number*	*Risk Phrases*
Water	20	7732-18-5		
Alkali Silicate	13	1344-09-8		R38, R41
Inert Ceramic Oxides	67			

Ingredient Comments Ceramic oxide blends of varying composition and particle size suspended in alkali silicate solution. Primary Risk - Irritant

Section 3. Hazards Identification.

Emergency Overview.

Primary Risk -  **Xi Irritant.**

Primary Routes of Entry Eyes skin.

Adverse Human Health Effects Alkali Silicates may cause caustic burns to eyes and skin, and are harmful by ingestion causing internal irritation.

HEALTH WARNINGS

Eye Contact Alkaline material which may cause caustic burns to eyes.

Skin Contact Alkaline material which may cause caustic burns to skin.

Ingestion Harmful by ingestion, causing internal irritation

Section 4. First Aid Measures.

Eye Contact Speed is essential. Promptly wash eyes with lots of water while lifting the eyelids. Continue to rinse for at least 20 minutes and get medical help attention.

Skin Contact Remove victim from source of contamination. Promptly wash contaminated skin with copious amounts of water until no soapy feeling remains. Promptly remove clothing if soaked through and wash as above.

Ingestion **NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! DO NOT INDUCE VOMITING.** Get medical attention immediately. Wash out mouth with water and give sips of water or milk to soothe the affected parts.

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Section 5. Fire Fighting Measures.

Flash point (C°)	Non-Combustible
Flash Point Method	n/a
Auto Ignition Temperature (C°)	n/a
Flammability Limit : - lower %	n/a
Flammability Limit : - upper %	n/a
Extinguishing Media	Non-Combustible. Use extinguishing media appropriate for surrounding fire.
Special Fire Fighting Procedures	No specific fire fighting procedures noted.
Unusual Fire/explosion hazards	n/a

Section 6. Accidental Release Measures.

Spillage Clean-up Methods	Absorb in dry sand and place into containers. Flush area with water. Wash to drains with plenty of water, inform treatment plant operator. Spillages, unless dealt with promptly, will set to a hard ceramic mass, which when wetted may become slippery.
Environmental Precautions.	If size of spillage warrants and has contaminated water courses, drains or vegetation, advise appropriate authorities.

Section 7. Handling & Storage.

Usage Precautions	Avoid spilling, skin and eye contact.
Storage Precautions	Keep in cool, dry, ventilated storage and closed containers. Keep above the chemical's freezing point. Do not store at temperatures above 50°C for prolonged periods.
Storage Criteria	Chemical storage

Section 8. Exposure Controls - Personal Protection.

Eye Protection	Wear splash-proof goggles to prevent any possibility of eye contact. Eye baths should be available in areas where accidental exposure is possible.
Protective Gloves	Chemical resistant gloves required for prolonged or repeated contact. Use protective gloves made of impermeable material, rubber or plastic.
Respirators	Under normal work conditions Respiratory Protection is not required
Ventilators	No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.
Hygienic Work Practices	No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals.

Section 9. Physical & Chemical Properties.

VOC Content	Nil
Boiling Point	Water: 100-101°C.
Specific Gravity (Water=1)	2.40
Vapour Density	As H_2O vapour
Vapour Pressure	As H_2O vapour
Percent Volatiles	As H_2O: % by weight
Solubility Description	Miscible with water.
pH	12
Colour	White paste
Appearance	Viscous paste
Odour/Taste	No characteristic odour
Mol Wt. (Atomic Weight)	n/a
Viscosity as Supplied	
Physical State as Supplied	Viscous paste.

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Section 10. Stability and Reactivity.

Stability and Reactivity - Conditions for instability	Contact with acids will cause the paste to gel. Absorbs carbon dioxide from air.
Materials to avoid.	All acids. May react with new surfaces of aluminium, zinc and their alloys.
Hazardous Decomposition Products	Contact with new surfaces of aluminium, brass, tin & zinc may produce hydrogen gas.
Hazardous Polymerisation	n/a

Section 11. Toxicological Information.

Clinical Test Data	Alkali Silicate - Lethal Dosage (Rat) 1280mg/Kg
Effects	Severe eye irritant. Ingestion may result in burning sensation in the mouth & throat, inability to swallow and irritation of the gastro-intestinal tract with nausea and vomiting.

Section 12. Ecological Information.

Environmental Information	
Persistence & Degradation	Soluble silicates upon dilution rapidly de polymerise into molecular species indistinguishable from natural dissolved silica.
Toxicity	
Effect on Effluent Treatment	Unlikely to have adverse effects on sewage treatment processes.

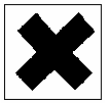
Section 13. Disposal Considerations.

Disposal	For disposal by landfill, alkali silicates are classed as a special waste under the UK Control of Pollution (Special Waste) Regulations. For dilute solutions or in mixtures, Waste Management Paper No 23 published by the Department of the Environment should be consulted. Consult local regulations before disposal.

Section 14. Transport Information.

Transport Information	Not classified as dangerous goods under the United Nations Transport Recommendations.

Section 15. Regulatory Information.

Classified as	Irritant -  **Xi Irritant.**
Risk Phrases	R38, R41
Safety Phrases	S2, S26, S36/37/39

Section 16. Other Information.

Shelf Life	Tins - 12 months.
Batch Code	Batch/Week/Year e.g. 01/52/98 (from 01/01/99)
Issue date	08-01-2007
Document Ref:	CHROMIX.DOC
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