

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

1.1 PRODUCT IDENTIFICATION

Xypex Surface Applied Products:

Xypex Concentrate
Xypex Modified
Xypex Concentrate DS-1
Xypex Concentrate DS-2
Xypex Megamix 1
Xypex Megamix 11

1.2 PRODUCT USE

Waterproofing and protection of concrete

1.3 COMPANY IDENTIFICATION

Xypex (UK) LLP
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1.4 EMERGENCY TELEPHONE NO:

During normal UK office hours: +44 (0)1684 577756

During normal Western Canadian office hours
(-8hr GMT): +1 604 273 5265

All other times, and in times of unavailability, contact your local emergency services

2. HAZARD IDENTIFICATION

Alkaline when wet
EEC Symbol: Xi

2.1 HAZARD CHARACTERISATION

R34 Causes burns
R36 Irritating to eyes
R37/38 Irritating to respiratory system and skin
R41 Risk of serious damage to eyes
R43 May cause sensitisation by skin contact

2.2 PRIMARY ROUTE OF ENTRY

Inhalation : YES
Skin – eyes : YES
Ingestion : NO – except in accidental cases

2.3 HUMAN HEALTH

INHALATION:

Inhalation may lead to irritation, inflammation or burns.

Prolonged or frequent or excessive exposure to respirable crystalline silica dust and alkaline earth products may cause respiratory disease, lung disease, lung and respiratory tract damage, ulceration and perforation of the nasal septum, pneumonitis and other serious bad health effects.

The excessive inhalation of crystalline silica dust may result in respiratory disease, including silicosis, pneumoconiosis and pulmonary fibrosis. IARC has concluded that there is 'sufficient evidence for the carcinogenicity of inhaled crystalline silica in the form of quartz and cristobalite in certain industrial circumstances, but that the carcinogenicity may be dependant on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of polymorphs'.

The silica quartz has also been shown to cause mutagenic activity in mammalian and human cells, in vitro.

Principle symptoms of lung fibrosis (commonly referred to as silicosis) are cough and breathlessness. Occupational exposure to respirable crystalline silica dust should be monitored and controlled.

EYES:

Ingredients may cause irritation and burning to eyes.

Eye burns and serious irreversible damage can result from exposure to alkaline earth compounds.

Eye contact with cement or cement based products (wet or dry) may cause serious and irreversible injuries.

SKIN:

Portland cement and alkaline earth compound are an irritant to skin. Ingredients are dermal irritants and dermatitis may develop following exposure.

Cement may have an irritating effect on moist skin (due to transpiration of humidity) after prolonged contact. Prolonged skin contact with wet cement or fresh concrete may cause serious burns because they develop without pain being felt. Repeated skin contact with wet cement may cause dermatitis.

2.4 ENVIRONMENT

Do not allow the material to enter water course. If water is contaminated inform the relevant authorities immediately. The addition of a significant amount of cementitious products to water may cause a rise in the pH value and therefore may be toxic to aquatic life under certain circumstances.

2.5 FURTHER INFORMATION

This product contains Chromium (VI) and may produce an allergic reaction. The cement in this product may contain a reducing agent; the effectiveness of the reducing agent reduces

with time. The storage period for the cement ingredients in accordance with the declared storage period set out by the BCA. Use of this product after the end of the declared storage period may increase the risk of an allergic reaction. Reducing agents do not make cementitious products safe to handle without PPE. ALWAYS USE THE FULL RECOMMENDED PPE WHEN USING THIS PRODUCT. Store this product in a draught free environment, clear of the ground, avoiding humid conditions and extremes of temperature (minimum lower temperature of 7°C). The product should be used within 6 months of the date of production marked on the tin and should not have been exposed to the atmosphere or any risk of oxidation prior to use.

3.2 COMPONENTS PRESENTING A HEALTH HAZARD

<u>SUBSTANCE</u>	<u>CONCENTRATION</u>	<u>EINECS</u>	<u>CAS</u>	<u>SYMBOL</u>	<u>R</u>
Portland Cement	25 - 35%	266-043-4	65997-15-1	Irritant	R 34, 36, 37, 38, 41, 43
Alkaline Earth Compounds	5 - 20%	215-137-3	1305-62-0	Irritant	R 38, 41
Silica Sand	30 - 40%	238-878-4	14808-60-7	-	-
Cementitious Mixture	10 - 25%	N/A	N/A	Irritant	R 34, 36, 37, 38, 41, 43

4 FIRST AID MEASURES

When seeking medical advice take this safety data sheet with you.

4.1 AFTER INHALATION

Move person to fresh air and away from exposure. Keep individual warm and at rest. Dust in throat and nasal passages should clear spontaneously. If not, irrigate nose and throat with clean water for at least 20 minutes. Seek immediate professional medical attention. If irritation persists, or later develops, or if discomfort, coughing or other symptoms do not subside seek professional medical attention again.

4.2 AFTER CONTACT WITH EYES

Do not rub eyes as additional cornea damage is possible by mechanical stress. Remove any contact lenses and open the eyelid(s) widely to flush eye(s) immediately by thoroughly rinsing with plenty of clean water for at least 45 minutes to remove all particles. Seek immediate professional medical attention.

It is advisable to ensure that eyewash facilities are available when this product is handled.

4.3 AFTER SKIN CONTACT

When in contact with the product in dry state, remove powder and rinse abundantly with clean water. When product is wet, under running water, remove contaminated clothing, shoes, watches etc.... Continuously flush contaminated area with lukewarm, gently flowing water for at least 20 – 60 minutes. Seek immediate professional medical attention. Clean all clothing, shoes, watches etc... before re-using them.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 CHEMICAL COMPOSITION

Product contains a dry blend of cement and fillers.

Hazardous ingredients:

Cementitious mixture (Class D2 – Irritant),
Portland limestone cement, Silica Sand and Alkaline Earth Compound

4.4 AFTER INGESTION

Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration.

If conscious, wash out mouth with clean water. Drink 1 cup (240-300ml) of water followed by dilution with milk if available. Ensure plenty of water available to drink.

Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing.

Seek immediate professional medical assistance and contact an anti poison centre.

5. FIRE FIGHTING MEASURES

5.1 FLASHPOINT AND METHOD

Product not flammable and not subject to explosion.

5.2 EXTINGUISHING MEDIA

All types of extinguishing media are suitable. Liaise with local fire authority for confirmation of best and most current form of extinguishing media for the product.

5.3 FIRE FIGHTING EQUIPMENT

No need for specialist protective equipment for fire fighters.

5.4 COMBUSTION PRODUCTS

None.

5.5 FLAMMABLE LIMITS

Lower explosion limit LEL – Upper explosion limit UEL

Not applicable

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PROTECTIVE MEASURES

Always wear full protective equipment and always follow advice for safe handling procedures and use as described elsewhere within this document. Ensure have adequate ventilation. Avoid airborne dust generation.

6.2 ENVIRONMENT PROTECTION MEASURES

Do not allow product into drains or water courses. Any spillages into watercourses must be alerted to the Environment Agency or other regulatory body.

6.3 METHODS FOR CLEANING UP

At all times avoid inhalation of product and contact with skin and eyes.

Contain the spillage. Keep the material dry if possible. Wear full personal protective equipment when cleaning up, whatever method is chosen.

When the product is in a dry state, avoid airborne dust generation when cleaning up. Avoid dry sweeping. Examples of clean up methods when in dry state are:

(A) Using a vacuum cleaner (Industrial portable units, equipped with high efficiency particulate filters (HEPA filter) or equivalent technique)

(B) Wipe up the dust by mopping, wet brushing or water sprays or hoses (fine mist to avoid the dust becoming airborne) and remove slurry.

If the product has become wet, clean up and place in watertight container. Allow material to dry and solidify before disposal. Check current regulations before disposing of spillage, whether in dry state or not.

7. HANDLING AND STORAGE

Do not handle or store product near food, beverages or smoking materials.

7.1 HANDLING

Avoid dust generation.

At all times avoid inhalation of product and contact with skin and eyes.

Carrying the product may cause back injuries, strains, sprains or the like. Use correct handling techniques to avoid injury. Use handling equipment and controls if necessary to avoid injury. If in doubt, contact your local health and safety body for further guidance on manual handling.

Always wear sufficient protective equipment and suitable clothing when handling the product. Ensure have adequate ventilation / ventilation equipment available when handling the product.

7.2 STORAGE

Store this product in a draught free environment, clear of the ground, avoiding humid conditions and extremes of

temperature (minimum lower temperature of 7°C). The product should be used within 6 months of the date of production marked on the tin.

Any product that is stacked should be done so in a stable manner, and to a safe height.

7.3 CONTROL OF SOLUBLE Cr (VI)

This product contains Chromium (VI) & may produce an allergic reaction. Please refer to section 2.5 of this document for further information.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 EXPOSURE LIMIT VALUES (WORKPLACE EXPOSURE LIMITS (WEL))

Refer to latest edition of HSE EH40 for up to date MEL'S and OEL'S of Inhalable and Respirable dust

WEL 8hr Time Weighted Average (TWA)

Cement

Total inhalable dust 10mg/m³

Respirable dust 4 mg/m³

Alkaline Earth Compound

Occupational exposure Standard – 5mg/m³

Silica Sand

The workplace MEL (Maximum Exposure Limit) for respirable crystalline silica dust is 0.3 mg/m³ in the United Kingdom, measured as an 8 hour TWA (Time weighted average). However the Health and Safety Executive believes it should now be reasonably practicable for all Industry sectors to control respirable crystalline silica to 0.1mg/m³ (8 hour TWA).

Cementitious Mixture

Total respirable dust 10mg/m³

Respirable dust 4 mg/m³

8.2 EXPOSURE CONTROLS

8.2.1 Occupational exposure controls

General – During work avoid kneeling in the product. If kneeling is absolutely necessary then appropriate impervious waterproof personal protective equipment must be worn.

Do not eat, drink or smoke when working with the product to avoid contact with skin or mouth. Immediately after working with the product, workers should wash or shower or use skin moisturisers. Remove contaminated clothing, footwear, watches, etc... and clean thoroughly before re-using.

Provide adequate and suitable ventilation / ventilation equipment when handling product, to maintain dust below OES. All ventilation systems should be filtered before discharge to atmosphere.

Respiratory Protection - Always use respiratory protection. Inhalation of product dust must be avoided at all times. Use an FFP2 mask (to EN 149:2001), or in times of heavy exposure an air stream-helmet.

Eye Protection – Wear safety goggles/glasses to EN 166(5) at all times when handling the product. Ensure the goggles/glasses have suitable side protection, are tight fitting, are impact resistant, are anti-mist, have wide vision, and that there is no risk of product particles being able to enter the eye(s). It is advisable to ensure that eyewash facilities are available when this product is handled.

Skin Protection – Use impervious, abrasion and alkali resistant gloves (made of low soluble Cr (VI) containing material) internally lined with cotton, enclosed rubber boots that resist dust penetration, closed long-sleeved impervious protective clothing that protects skin from contact. Close all fittings at opening. Additionally use skin care products (including barrier creams)

Additional safety precautions may include the provision of a shower facility.

8.2.2 Environmental exposure controls. – According to available technology.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 GENERAL INFORMATION

The product has the appearance of a grey particulate powder and is odourless.

9.2 PHYSICAL DATA

Its physical state is solid.

pH 9.1 (EPA method – 2 parts water to 1 part powder by volume weight)

Specific Gravity – 2.8 (water)

10. STABILITY AND REACTIVITY

10.1 STABILITY

The product is chemically stable. When mixed with water it will harden, with time, into a stable mass.

Products may liberate Carbon monoxide or Carbon Dioxide

Alkaline earth compounds will cause explosive decomposition of maleic anhydride, nitroalkanes and nitroparaffins, in the presence of water, form salts with inorganic salts and with inorganic bases. The dry salts are explosive.

Alkaline earth compounds decompose with loss of water at approximately 580 degrees Celsius to form Calcium Oxide.

10.2 CONDITIONS TO AVOID

Avoid humid and drafty environments during storage. Also avoid storage temperatures below 7° C.

10.3 MATERIALS TO AVOID

Products are incompatible with strong acids.

10.4 HAZARDOUS DECOMPOSITION PRODUCTS

None known.

11. TOXICOLOGICAL INFORMATION

11.1 ACUTE EFFECTS

Eye contact - Direct contact with product may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact either in dry or wet form may cause effects ranging from moderate eye irritation (eg conjunctivitis or blepharitis) to chemical burns or blindness.

Skin contact – When skin is exposed to the product in its dry or wet state, thickening, cracking or fissuring of the skin may occur. Prolonged contact in combination with abrasion can cause severe burns.

Acute dermal toxicity – The cement incorporated with the other ingredients in this product has been subject to a Limit test. (Limit test, rabbit, 24 hours contact, 2,000 mg/kg body weight – no lethality.)

Ingestion – May cause irritation to the gastrointestinal tract.

Inhalation – The product may irritate the throat and respiratory tract. Coughing, sneezing and shortness of breath may occur following exposures in excess of occupational exposure limits.

11.2 CHRONIC EFFECTS

Inhalation – Chronic exposure to respirable dust in excess of occupational exposure limits may cause coughing, shortness of breath and may cause chronic obstructive lung disease (COPD)

Carcinogenicity - Prolonged and/or massive exposure to respirable crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystalline silica.

In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However it pointed out that not all industrial circumstances, nor all crystalline silica types, were to be incriminated (*IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France*)

In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. ‘There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore preventing the onset of silicosis will also reduce the cancer risk....’ (*SCOEL SUM Doc 94-final, June 2003*)

There is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis. According to the current state of the art, worker protection against silicosis can be constantly assured by respecting the existing regulatory occupation exposure limits.

Contact dermatitis/Sensitising effects –Prolonged and repeated skin contact with Alkaline earth products may cause dermatitis.

Some individuals may exhibit eczema upon exposure to wet cementitious products, caused either by the high pH which induces irritant contact dermatitis, or by an immunological reaction to soluble Cr (VI) which elicits allergic contact dermatitis. The response may appear in a variety of forms ranging from a mild rash to severe dermatitis and is a combination of those two mechanisms. An exact diagnosis is often difficult to assess.

11.3 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Inhaling dust may aggravate existing respiratory system disease(s) and/or medical conditions such as emphysema or asthma and/or existing skin and/or eye conditions.

12. ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

Do not allow the product to enter water courses. If water is contaminated inform the relevant authorities immediately. The addition of large amounts of the product to the water course may raise the pH and may therefore be toxic to aquatic life under certain circumstances.

12.2 MOBILITY

Product can become airborne during handling operations

12.3 PERSISTENCE AND DEGRADABILITY / BIO ACCUMULATIVE POTENTIAL / RESULTS OF PBT ASSESSMENT / OTHER ADVERSE EFFECTS

Alkaline earth material is non bio-degradable – reacts with atmosphere and dissolved carbon dioxide to form calcium carbonate (chalk)

13. DISPOSAL CONSIDERATIONS

Avoid creation of airborne and respirable dust when disposing of product.

13.1 PRODUCT THAT HAS EXCEEDED ITS SHELF LIFE

When demonstrated that the product contains more than 0.0002% soluble Cr (VI): Shall not be used other than for use in controlled, closed and totally automated processes or should be recycled or disposed of according to local legislation or treated again with a reducing agent (subject to approval).

13.2 PRODUCT – UNUSED RESIDUE OR DRY SPILLAGE

Pick up dry and put in containers. Mark container clearly. In case of disposal, harden with water to avoid dust creation. Dispose of at a licensed waste facility accepting cementitious and earth alkaline based waste. Dispose of all materials in accordance with current regulations / legislation.

13.3 PRODUCT - SLURRIES

Allow to harden. Avoid entry into sewage and drainage systems or into bodies of water and dispose of as indicated in 13.4

13.4 PRODUCT – AFTER ADDITION OF WATER, HARDENED

Dispose of at a licensed waste facility accepting cementitious and earth alkaline based waste. Dispose of all materials in accordance with current regulations / legislation. Avoid entry into sewage and drainage systems or into bodies of water.

13.5 PACKAGING

Completely empty packaging and process it according to current regulations / legislation.

14. TRANSPORT INFORMATION

The product is not currently classified as hazardous for transport purposes.

15. REGULATORY INFORMATION

15.1 CLASSIFICATION AND LABELLING OF PRODUCT



IRRITANT

RISK PHRASES

Xi - Irritant
R34 - Causes burns
R36 - Irritating to eyes
R37/38 - Irritating to respiratory system and skin
R41 - Risk of serious damage to eyes
R43 - May cause sensitisation by skin contact

SAFETY PHRASES

S2 - Keep out of reach of children
S22 - Do not breathe dust
S24/25 - Avoid contact with skin and eyes
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection
S46 - If swallowed, seek medical advice immediately and show this container or label

15.2 THE MARKETING AND USE OF CEMENT BASED PRODUCTS IS SUBJECT TO A RESTRICTION ON THE CONTENT OF CHROMIUM (VI)

From 17 January 2005, those cement based products that contain more than 2 ppm of soluble hexavalent chromium (Chromium VI) by dry weight of cement will either be withdrawn from the market place, or treated with a chemical reducing agent. The effectiveness of the reducing agent reduces with time, therefore packaging and / or delivery documents will contain information on the period of time (Shelf life) for which it has been established that the reducing agent will continue to limit the level of hexavalent chromium to less than 2 ppm by dry weight of cement. They will also indicate the appropriate storage conditions for maintaining the effectiveness of the product.

15.3 NATIONAL LEGISLATION / REQUIREMENTS

CONIAC Health Hazard Information Sheet No 26 (Cement)

Health and Safety at Work etc Act 1974

Control of Substances Hazardous to Health (Regulations)

PORTLAND CEMENT DUST – criteria document for an occupational exposure limit.
June 1994 (ISBN 07176-0763-1)

HSE Guidance Notes EH26 (Occupational Skin Diseases – Health and safety precautions)

HSE Guidance Note EH40 – (Workplace Exposure Limits)

First Aid Manual authorised by St John's/St Andrew's/Red Cross

Manual Handling Operation Regulations

Environmental Protection Act

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002.
Statutory Instrument 2002 No.1689

HSE Chemical Hazard Alert Notice 35

REACH
(Registration, Evaluation and Authorisation of Chemicals)

COSHH Essentials : Easy steps to control chemicals
COSHH Regulations HSE 193

16. OTHER INFORMATION

Abbreviations

OEL: Occupational Exposure Limit
TWA: Time Weighted Averages
MEL: Maximum Exposure Limit
UEL: Upper Explosion Limit
LEL: Lower Explosion Limit
PPE: Personal Protective Equipment

References

Portland Cement Dust – Hazard assessment document
EH75/7, UK Health and Safety Executive, 2006.

Observations on the effects of skin irritation caused by cement, Kietzman et al, *Dermatosen*, 47,5, 184-189 (1999)

European Commission's Scientific Committee on Toxicology, Ecotoxicology and the Environment (SCTEE) opinion of the risks to health from Cr (VI) in cement (European Commission 2002)

Epidemiological assessment of the occurrence of allergic dermatitis in workers in the construction Industry related to the content of Chromium VI in cement, NIOH, Page 11, 2003.

EUROSIL – The European Association of Industrial Silica Sand Producers

The information contained in this Safety Data Sheet does not constitute the user's own assessment of the workplace risk as required by Health and Safety Legislation. It is the sole responsibility of the user to take all precautions required in handling the product.

The information in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use

in combination with any other material or in any process. The information given is based on technical data we believe to be reliable at time of issue. Because of conditions outside our control, it is the responsibility of the user to verify safety data for combinations with other materials, or for use in specific purposes, and to verify waste disposal requirements. Such information contained within this Safety Data Sheet is to the best of Xypex (UK) LLP knowledge and belief accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself/herself as to the suitability and completeness of such information for his/her own particular use.