ARDEX X 77 White

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Issue date: 8/22/2016 Revision date: 4/24/2023 Supersedes version of: 5/5/2021 Version: 4.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : ARDEX X 77 White
Product code : 18329

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : Construction materials
Use of the substance/mixture : Tiling

Function or use category : Construction materials

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer
Ardex UK Limited
Homefield Road
CB9 8QP Haverhill Suffolk
T 01440 714939 - F 01440 716667
E-mail address of competent person responsible for the SDS : safetydatasheets@ardex.co.uk

1.4. Emergency telephone number

Emergency number : +44 (0) 870 190 6777
24 hours

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 1	H318
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Causes skin irritation. Causes serious eye damage.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS05 GHS07

Signal word (CLP)	:	Danger
Contains	:	Portland cement
Hazard statements (CLP)	:	H315 - Causes skin irritation. H318 - Causes serious eye damage. H335 - May cause respiratory irritation.
Precautionary statements (CLP)	:	P102 - Keep out of reach of children. P280 - Wear eye protection, protective gloves. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P302+P352 - IF ON SKIN: Wash with plenty of soap and water. P261 - Avoid breathing dust.
Extra phrases	:	Dispose of contents/container in accordance with regional/national/international/local regulations.

2.3. Other hazards

Other hazards which do not result in classification : The product contains chromate reducer, whereby the content of water-soluble chromium (VI) is less than 0.0002%.
With proper storage (dry) and consumption within the specified storage time, a sensitizing effect of the cement / binder by contact with skin cannot occur (H317 or EUH203 can therefore be omitted).

PBT: not relevant – no registration required
vPvB: not relevant – no registration required
Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

Component	
calcium diformate (544-17-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Portland cement (65997-15-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
titanium(IV) oxide; [in powder form containing < 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (13463-67-7)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

Component	
Portland cement(65997-15-1)	The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %
calcium diformate(544-17-2)	The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Portland cement	CAS-No.: 65997-15-1 EC-No.: 266-043-4	> 20	Skin Sens. 1, H317 Eye Dam. 1, H318 Skin Irrit. 2, H315 STOT SE 3, H335
calcium diformate	CAS-No.: 544-17-2 EC-No.: 208-863-7	> 1 - < 3	Eye Dam. 1, H318
titanium(IV) oxide; [in powder form containing < 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	CAS-No.: 13463-67-7 EC-No.: 236-675-5 EC Index-No.: 022-006-00-2	< 1	Not classified

Comments : Chromium (VI) compounds < 2 ppm
Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion : If the person is fully conscious, make him/her drink plenty of water. Never give an unconscious person anything to drink. Do not induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Serious damage to eyes.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media : high volume water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : No fire hazard.
Explosion hazard : None.
Hazardous decomposition products in case of fire : None.

5.3. Advice for firefighters

Precautionary measures fire : No specific measures are necessary.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

Protective equipment : Precautions for safe handling. See Section 7.
Emergency procedures : Avoid contact with skin and eyes.

6.1.2. For emergency responders

Emergency procedures : No specific measures are necessary.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : Mechanically recover the product. Minimise generation of dust. Collect spillage. Do not use compressed air for cleaning.

6.4. Reference to other sections

For further information refer to section 13. See Section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : See Section 8.
Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures : Wear protective gloves. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Protect from moisture. Store in a dry place. The product contains chromate reducer, whereby the content of water-soluble chromium (VI) is less than 0.0002%.
With proper storage (dry) and consumption within the specified storage time, a sensitizing effect of the cement / binder by contact with skin cannot occur (H317 or EUH203 can therefore be omitted).
Incompatible materials : Aluminium. Acids. ammonium salts.
Storage area : dry.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Portland cement (65997-15-1)	
United Kingdom - Occupational Exposure Limits	
Local name	Portland cement
WEL TWA (OEL TWA) [1]	10 mg/m³ 4 mg/m³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

titanium(IV) oxide; [in powder form containing < 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (13463-67-7)	
United Kingdom - Occupational Exposure Limits	
Local name	Titanium dioxide
WEL TWA (OEL TWA) [1]	10 mg/m³ 4 mg/m³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

calcium diformate (544-17-2)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	4780 mg/kg bw/day
Acute - systemic effects, inhalation	337 mg/m³
Acute - local effects, dermal	16.7 mg/cm²
Long-term - systemic effects, dermal	4780 mg/kg bw/day
Long-term - local effects, dermal	16.7 mg/cm²
Long-term - systemic effects, inhalation	337 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	2390 mg/kg bw/day
Acute - systemic effects, inhalation	83.2 mg/m³
Acute - local effects, dermal	8.3 mg/cm²
Long-term - systemic effects,oral	23.9 mg/kg bw/day
Long-term - systemic effects, inhalation	83.2 mg/m³
Long-term - systemic effects, dermal	2390 mg/kg bw/day
Long-term - local effects, dermal	8.3 mg/cm²
PNEC (Water)	
PNEC aqua (freshwater)	2 mg/l
PNEC aqua (marine water)	0.2 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	13.4 mg/kg dwt
PNEC sediment (marine water)	1.34 mg/kg dwt
PNEC (Soil)	
PNEC soil	1.5 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	2.21 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:
Safety glasses. Dust formation: dust mask. Gloves.

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
Wear closed safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Wear proper protective equipment

Hand protection:
Protective gloves. The following materials are suitable for protective gloves:
Nitrile impregnated cotton gloves (layer thickness of about 0,15 mm).

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
			0,15		

8.2.2.3. Respiratory protection

Respiratory protection:
If the occupational exposure limit is exceeded:

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

Other information:
Use care during processing to minimize generation of dust. Avoid creating or spreading dust.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	white.
Appearance	:	Powder.
Odour	:	odourless.
Odour threshold	:	Not available
Melting point	:	> 1250 °C
Freezing point	:	Not applicable
Boiling point	:	Not applicable
Flammability	:	Non flammable.
Explosive properties	:	None.
Oxidising properties	:	None.

Explosive limits	:	Not applicable
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	Not available
pH	:	< 11.5
pH solution	:	Not available
Viscosity, kinematic	:	Not applicable
Viscosity, dynamic	:	Not applicable
Solubility	:	Water: 0.1 – 1.5 g/l @ 20°C
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	2.75 – 3.2 g/cm³
Relative density	:	Not applicable
Relative vapour density at 20°C	:	Not applicable
Particle size	:	Not available
Particle size distribution	:	Not available
Particle shape	:	Not available
Particle aspect ratio	:	Not available
Particle aggregation state	:	Not available
Particle agglomeration state	:	Not available
Particle specific surface area	:	Not available
Particle dustiness	:	Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

VOC content	:	< 3 %
Bulk density	:	900 – 1300 kg/m³

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with water.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Acids. ammonium salts. Aluminium.

10.6. Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

calcium diformate (544-17-2)	
LD50 oral rat	2560 mg/kg (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Read-across, Skin, 14 day(s))
LC50 Inhalation - Rat	> 0.67 mg/l air (EPA OTS 798.1150: Acute inhalation toxicity, 4 h, Rat, Male / female, Read-across, Inhalation (dust), 14 day(s))
ATE CLP (oral)	2560 mg/kg bodyweight

titanium(IV) oxide; [in powder form containing < 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (13463-67-7)	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LC50 Inhalation - Rat	> 5.09 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Experimental value, Inhalation (dust), 14 day(s))

Skin corrosion/irritation : Causes skin irritation.
pH: < 11.5
Serious eye damage/irritation : Causes serious eye damage.
pH: < 11.5
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : May cause respiratory irritation.

Portland cement (65997-15-1)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

ARDEX X 77 White	
Viscosity, kinematic	Not applicable

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2. Other information

Potential adverse human health effects and symptoms : Irritation: severely irritant to eyes

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Not classified

calcium diformate (544-17-2)	
LC50 - Fish [1]	> 1000 mg/l (Other, 96 h, Danio rerio, Static system, Fresh water, Experimental value)
EC50 - Crustacea [1]	> 1000 mg/l (EPA 660/3 - 75/009, 48 h, Daphnia magna, Flow-through system, Fresh water, Experimental value, Locomotor effect)
ErC50 algae	> 1000 mg/l (EPA 600/9-78-018, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Read-across, Nominal concentration)
Portland cement (65997-15-1)	
LC50 - Fish [1]	> 1000 mg/l (96 h, Pisces)
titanium(IV) oxide; [in powder form containing < 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (13463-67-7)	
LC50 - Fish [1]	> 1000 mg/l (Pisces, Fresh water)
EC50 - Crustacea [1]	> 1000 mg/l (Invertebrata, Fresh water)
EC50 72h - Algae [1]	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)

12.2. Persistence and degradability

ARDEX X 77 White	
Persistence and degradability	Not applicable. Inorganic Particulate Substances.
BOD (% of ThOD)	Not applicable
calcium diformate (544-17-2)	
Persistence and degradability	Readily biodegradable in water.
Portland cement (65997-15-1)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
BOD (% of ThOD)	Not applicable
titanium(IV) oxide; [in powder form containing < 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (13463-67-7)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

ARDEX X 77 White	
Bioaccumulative potential	No bioaccumulation.
calcium diformate (544-17-2)	
Partition coefficient n-octanol/water (Log Pow)	-2.3 – -1.9 (Read-across, EU Method A.8: Partition Coefficient, 23 °C)
Bioaccumulative potential	Not bioaccumulative.
Portland cement (65997-15-1)	
Bioaccumulative potential	No bioaccumulation data available.

titanium(IV) oxide; [in powder form containing < 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (13463-67-7)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

ARDEX X 77 White	
Ecology - soil	None.
calcium diformate (544-17-2)	
Surface tension	72 mN/m (20 °C, 0.1 %)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.49 (log Koc, Read-across)
Ecology - soil	Highly mobile in soil.
Portland cement (65997-15-1)	
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available.
titanium(IV) oxide; [in powder form containing < 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (13463-67-7)	
Surface tension	No data available in the literature
Ecology - soil	Low potential for mobility in soil.

12.5. Results of PBT and vPvB assessment

ARDEX X 77 White
PBT: not relevant – no registration required
vPvB: not relevant – no registration required

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector’s sorting instructions.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Avoid release to the environment.
Ecology - waste materials : Avoid release to the environment.
European List of Waste (LoW) code : 17 01 01 - concrete
10 13 14 - waste concrete and concrete sludge
For residues
01 04 07* - wastes containing dangerous substances from physical and chemical processing of non-metalliferous minerals

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

ADR	IMDG	IATA
14.1. UN number		
Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name		
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
Not applicable	Not applicable	Not applicable
No supplementary information available		

14.6. Special precautions for user

- Overland transport

Not applicable

- Transport by sea

Not applicable

- Air transport

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)
Contains no substance(s) listed on the REACH Candidate List
Contains no substance(s) listed on REACH Annex XIV (Authorisation List)
Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)
Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)
Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)
Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)
VOC content : < 3 %

Other information, restriction and prohibition regulations : 1. Cement and cement-containing mixtures shall not be placed on the market, or used, if they contain, when hydrated, more than 2 mg/kg (0,0002 %) soluble chromium VI of the total dry weight of the cement.

2. If reducing agents are used, then without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of cement or cement-containing mixtures is visibly, legibly and indelibly marked with information on the packing date, as well as on the storage conditions and the storage period appropriate to maintaining the activity of the reducing agent and to keeping the content of soluble chromium VI below the limit indicated in paragraph 1.

3. By way of derogation, paragraphs 1 and 2 shall not apply to the placing on the market for, and use in, controlled closed and totally automated processes in which cement and cement-containing mixtures are handled solely by machines and in which there is no possibility of contact with the skin.

4. The standard adopted by the European Committee for Standardization (CEN) for testing the water-soluble chromium (VI) content of cement and cement-containing mixtures shall be used as the test method for demonstrating conformity with paragraph 1.

5. Leather articles coming into contact with the skin shall not be placed on the market where they contain chromium VI in concentrations equal to or greater than 3 mg/kg (0,0003 % by weight) of the total dry weight of the leather.

6. Articles containing leather parts coming into contact with the skin shall not be placed on the market where any of those leather parts contains chromium VI in concentrations equal to or greater than 3 mg/kg (0,0003 % by weight) of the total dry weight of that leather part.

7. Paragraphs 5 and 6 shall not apply to the placing on the market of second-hand articles which were in end-use in the Union before 1 May 2015.

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.