



Par Moor Centre, Par Moor Road, Cornwall, UK PL24 2SQ
 Telephone: +44 (0)1726 74482 Fax: +44 (0)1726 623019
 Emergency Tel No: +44 (0)1726 828800

MATERIAL SAFETY DATA SHEET

Section 1 - Material Identity

Product Trade Name: Molochite
Common Name(s): Calcined China Clay, Calcined Kaolin
Chemical Name: Calcined Kaolin
CAS Number: 92704 - 41 - 1
EINECS Number: 296 - 473 - 8
Physical Form: White Granular

Section 2 - Composition/Information on Components

Dry Calcined China Clay

Calcined china clay grades are formed by the calcination of naturally occurring china clay (also known as kaolin). Calcination causes the china clay to undergo a gradational phase change from natural china clay to metakaolin, then alteration to an amorphous defect spinel structure through to the final formation of mullite. The latter phase changes also give rise to amorphous silica rich components. All dry calcined products may be considered similar in respect to their potential health hazards.

Calcined kaolin

CAS number: 92704 - 41 - 1
 EINECS number: 296 - 473 - 8

An OES (Occupational Exposure Standard) for calcined kaolin is not quoted. However Kaolin has an OES of 2.0 mg/m³ in a TWA 8hr reference period for respirable dust and this should be adopted for calcined china clay.

IMERYS dry calcined china clay products comprise 100wt% calcined china clay with no additional ingredients.

Calcined china clay may contain the following constituents.

Crystalline Silica

CAS number: Various
 EINECS number: -

The maximum exposure limit for respirable crystalline silica dust is 0.3mg/m³ in a TWA 8hr reference period.

Molochite may contain trace quantities (typically of less than 0.05 wt. %) of crystalline silica.

Amorphous silica

CAS number: -
 EINECS number: -

The Occupational Exposure Standard (OES) for amorphous silica is 6mg/m³ of inhalable dust and 2.4mg/m³ of respirable dust in a TWA 8hr reference period.

IMERYS Molochite calcined china clays may contain up to 0.2 wt % quartz. A proportion of this silica may become available in the respirable fraction. The level of exposure to respirable silica will depend on the actions performed on the product during handling and use. Exposure levels should, therefore, be measured during use, in comparison to relevant occupational exposure limits, as exposure cannot be determined from bulk product analysis.

Mullite

CAS number: 1302 - 93 - 8
 EINECS number: 215 - 113 - 2

There are no specified exposure limits for mullite.

Section 3 - Hazard Information

Calcined China Clay is of low acute toxicity.

Long term exposure to any mineral dust could cause damage to the respiratory system.

Calcined China Clay could cause dryness and abrasion to the skin with prolonged contact.

Eye contact: Airborne dust may cause irritation to the eyes.

Wet Calcined China Clay spillage can constitute a slipping hazard.

Section 4 - First Aid Measures

4.1	Inhalation of Dust	Remove to fresh air. If any symptoms develop seek medical aid.
4.2	Skin Contact	Wash with soap and water.
4.3	Eye Contact	Flush with clean water.
4.4	Ingestion	Rinse mouth out with water.

Section 5 - Fire Fighting Measures

Non flammable – no special precautions necessary.

Section 6 - Accidental Release Measures

Collect dry granular material using a vacuum cleaner or other means where dust is not generated.

Mix slurry (water and calcined clay) with dry, inert, absorbent solid and collect for disposal. Do not discharge slurry to a water course.

Section 7 - Handling and Storage

7.1	Handling	Appropriate controls should be used to avoid generating dust when handling dry powders. No special precautions are indicated when handling slurries.
7.2	Storage	Granular materials should be stored in a dry covered area, slurries should be stored in covered containers.

Section 8 - Exposure Control/Personal Protection

8.1	Respiratory Protection	Use appropriate engineering controls to avoid dust generation when handling powders. Ensure that all occupational exposure standards are observed.
8.2	Skin Protection	Substance may have a drying and /or abrasive effect on the skin. Maintain good standards of industrial hygiene.
8.3	Eye Protection	Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses when working with this substance.

Section 9 - Physical and Chemical Properties

9.1	Appearance	White granular
9.2	Odour	None
9.3	pH	Not Applicable
9.4	Boiling point	Not Applicable
9.5	Explosive Properties	None
9.6	Oxidising Properties	None

9.7 Relative Density

Dry powder – 2.6

Section 10 - Stability and Reactivity

Stable and non reactive.

Section 11 - Toxicological Information

- | | |
|--------------------------------|---|
| 11.1 Inhalation of Dust | Calcined china clay has no determined acute toxic effects. Exposures to calcined china clay dust should be kept to below the occupation exposure standard, at which level no effects on chest health would be expected. Studies have not indicated any significant sensitisation, carcinogenic, mutagenic or teratogenic effects. |
| 11.2 Skin Contact | No determined toxicological effects. |
| 11.3 Ingestion | No determined toxicological effects. |

Section 12 - Ecological Information

- | | |
|-------------------------------------|---|
| 12.1 Environmental Statement | Calcined china clay is persistent and non biodegradable but is unlikely to have any long term effects on the environment. |
| 12.2 Mobility | Solid. Involatile. Insoluble in water. |
| 12.3 Degradability | Non biodegradable. Persistent. |
| 12.4 Accumulation | No bio-accumulation or bio-magnification identified. |
| 12.5 Ecotoxicity | Calcined china clay is non toxic to fish, daphnia and aquatic algae, soil organisms and plants/animals. |

Section 13 - Disposal Considerations

Calcined china clays can be disposed of as non toxic/inactive material in approved landfill sites in accordance with local regulations.

Section 14 - Transport Information

Calcined china clays are not classified as dangerous for transportation under EU or UK national regulations. No special precautions are required.

Section 15 - Regulatory Information

- | | |
|---|--|
| 15.1 Classification | Calcined china clay is not classified as dangerous to supply under EU or UK national regulations. |
| 15.2 Occupational Exposure Standards | Calcined china clay does not have a specified OES. It is recommended that the OES for kaolin of 2 mg/m ³ respirable dust in a 8hr reference period is used. |
| 15.3 Legislative Requirements | <p>The following are relevant measures under UK legislation but the user's attention is drawn to the possible existence of additional provisions which complement these regulations. Refer to all applicable local, national and international regulations and provisions.</p> <p>Health and Safety at Work Act (HSWA)
Control of Substances Hazardous to Health (COSHH)
Environmental Hygiene Guidance (EH40) – revised annually.</p> |

The information contained in this Material Safety Data Sheet does not constitute an assessment of workplace risks.

Section 16 - Other Information

16.1 Training Advice

Workers should be trained to handle products without generating dust or spillages.

16.2 Bibliography

- 1) Carriage of Dangerous Goods (Classification, Packaging and Labelling) Regulations
- 2) Chemicals (Hazard Information and Packaging for Supply) Regulations
- 3) Control of Substances Hazardous to Health Regulations
- 4) Dust: General Principles of Protection (EH44)
- 5) Environmental Hygiene Guidance (EH40)

IMERYS is a business name of IMERYS Minerals Ltd

The information contained in this Safety Data Sheet supersedes all previous such sheets and is based upon the Company's current knowledge at the date of preparation. It is given in good faith, without any warranty, expressed or implied, regarding its correctness or completeness. The conditions or methods of handling, storage, use or disposal of the product are beyond our knowledge.

It is the sole responsibility of the user to take all precautions required in handling the product.

Date Prepared: August 2003 – First Edition

Reference No: HS/CHCL/02

Molochite™



Molochite™
is a trade mark of
IMERYS Minerals Ltd

ECC is a business name of
IMERYS Minerals Ltd

The data quoted are
determined by the use
of ECC Standard Test
Methods, copies of
which will be supplied
on request. Every
precaution is taken in
production to ensure
the products conform
to our published data.
Since the products are
based on naturally
occurring materials, we
reserve the right to
change these data
should it become
necessary. Sales are in
accordance with our
"Conditions of Sale",
copies of which will be
supplied on request.



FM26089

BS EN ISO 9001:2000

PRODUCT SPECIFICATION

Chemical Composition (mass %):

	Value	Range	
		Min	Max
Al ₂ O ₃	42,0	40,5	43,5
Fe ₂ O ₃	1,00	0,75	1,30
K ₂ O	2,00	1,80	2,20

Magnetics (ppm max.)

Rare Earth Magnet	Value
Coarse grades	170
Intermediate grade	280
-200 GL	50
Other milled grades	120
DC	800

TYPICAL DATA

The following data is provided for information only and is derived from quality control tests over a number of years. It does not constitute a specification.

Chemical Composition (mass %):

SiO ₂	54,5
TiO ₂	0,07
CaO	0,06
MgO	0,31

Mineralogical Composition by X-ray diffraction (mass %):

Mullite	55
Amorphous material	45

Thermal expansion:

Coefficient of expansion, 20-1000°C	4,44 x 10 ⁻⁶
-------------------------------------	-------------------------

Specific gravity:

2,70

True Porosity (vol. %)

8

Refractoriness:

Initial deformation	1750-1770*	(Cone 34 - 35)
Squatting	+ 1770*	(+ Cone 35)

Hardness:

Moh's scale	7- 8
-------------	------

C1/500/C

June 2003

Molochite
© IMERYS

Seventh Edition.
This supersedes
the document dated
December 2002

IMERYS Minerals Ltd

Par Moor Centre

Par Moor Road

Par, Cornwall

PL24 2SQ, UK

Tel: +44 (0) 1726 81 8000

Fax: +44 (0) 1726 81 1200



PRODUCT SPECIFICATIONS

Cumulative mass % finer than the denoted sieve aperture

Key:

Maximum	X	X
Minimum	X	X

Where no maximum and minimum values are shown, then Mean Value is indicative only.

GRADING	Coarse						Intermediate						Milled			Other	
	1/4-8	8-16	8	16-30	16-300D	18-360D	22-600D	-22	30-800D	-30	50-800D	-80	-120	-200/-200GL	-325	DC	Superfine
Normal Sizes	2.00 to 6.70	1.00 to 2.00	0 to 2.00	0.5 to 1.00	0.5 to 1.00	0.425 to 0.85	0.25 to 0.71	0 to 0.71	0.18 to 0.50	0 to 0.50	0.18 to 0.30	0 to 0.18	0 to 0.125	0 to 0.075	0 to 0.053	-	0 to 0.01
MIM	BSS	AFNCR	DIN														
9.5	-	-	10.00														
6.70	1/4	38*	6.30	100/100													
4.75	3/8	38*	5.00														
4.00	4	37	4.00	71/52													
2.80	6	35*	2.80		100/100												
2.00	8	34	2.00	5/0	100/98												
1.70	10	33*	1.80*	2/0	90/77												
1.18	14	32*	1.25		100/100												
1.00	16	31	1.00	0/0	94/71	100/100	100/100	100/100									
0.85	18	30*	0.80		99/99												
0.71	22	29*	0.71	0/0	64/43	100/63	100/100	100/91	100/100	100/100							
0.50	30	28	0.50		36/12	14/3	98/74	82/70	100/99	100/98							
0.355	44	26*	0.355		1/1	2/1	55/36	30/52	35/57	31/78	100/100						
0.300	52	26*	0.315								100/98						
0.250	60	25	0.250		17/0	16/0	14/6	40/36	28/11	11/54	30/73				98		
0.180	85	24*	0.200*				2/1	4/0	4/2		14/6						
0.150	100	23*	0.160		9/0			27/20	2/1	4/30	5/1	98			96		
0.125	120	22	0.125								11/56						
0.075	200	20*	0.080*		4/0			8/8		11/11	25/25	85	97	100	88		
0.053	300	18*	0.050									72/68	92/80	96/80	79/80		
0.020												28	45	52	47		
0.010												17	28	32	22		100/94
0.002																	40/13

*Nearest equivalent