# SAFETY DATA SHEET



Revision date: 26-Nov-2024

**Revision Number** 6

## Section 1: Identification

**Product identifier** 

Product Name QUICKLIME

**Product Code(s)** 000034372901

Other means of identification

**CAS No.** 1305-78-8

Synonyms Calcium oxide; Quicklime; Burnt lime; Unslaked lime; Fluxing lime; Calx.

Recommended use of the chemical and restrictions on use

**Recommended use**As a flux in the steel industry and in the production/recovery of aluminium, magnesium,

uranium gold and silver. It is used to make chemicals such as sodium alkalis, calcium

hypochlorite and petrochemicals; can be used in soil stabilisation.

**Uses advised against** No information available.

Details of manufacturer or importer

Supplier

IXOM Operations Pty Ltd ABN: 51 600 546 512 Level 8, 1 Nicholson Street Melbourne 3000

Australia

Telephone Number: +61 3 9906 3000

### Emergency telephone number

Emergency telephone number 1 800 033 111 (ALL HOURS)

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

### Section 2: Hazard identification

Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS). Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail: NON-DANGEROUS GOODS.

#### **GHS Classification**

<u></u>	
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

#### Label elements

Corrosion

**Exclamation mark** 



#### Signal word DANGER

#### **Hazard statements**

H315 - Causes skin irritation

H318 - Causes serious eye damage

H335 - May cause respiratory irritation

### **Precautionary Statements - Prevention**

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wash face, hands and any exposed skin thoroughly after handling.

Wash eyes thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/clothing and eye/face protection.

### **Precautionary Statements - Response**

Specific treatment (see First aid on this SDS).

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

#### **Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

### **Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

### Other hazards which do not result in classification

## Section 3: Composition and information on ingredients

Chemical name	CAS No.	Weight-%
Calcium oxide	1305-78-8	90-95
Crystalline silica (Quartz)	14808-60-7	1-4
Magnesium oxide	1309-48-4	0.5-1.5
Limestone	1317-65-3	0-2
Aluminium oxide	1344-28-1	0-1.5
Iron (III) oxide	1309-37-1	0-1

### Section 4: First aid measures

### Description of first aid measures

General advice For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New

Zealand 0800 764 766) or a doctor.

**Inhalation** Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. If not

breathing, give artificial respiration. Get medical attention immediately if symptoms occur.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep

eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

**Skin contact** Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical

attention if irritation develops and persists.

Ingestion Rinse mouth thoroughly with water. Drink 1 or 2 glasses of water. Do NOT induce vomiting.

Never give anything by mouth to an unconscious person. Get medical attention if symptoms

occur.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

**Symptoms** Irritation/Corrosion. May cause redness and tearing of the eyes. Erythema (skin redness).

Coughing and/ or wheezing. Difficulty in breathing.

**Effects of Exposure** No information available.

Indication of any immediate medical attention and special treatment needed

**Note to physicians** Treat symptomatically. Can cause corneal burns.

## Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Dry chemical or CO2.

Unsuitable extinguishing media Water.

Specific hazards arising from the chemical

Specific hazards arising from the

chemical

Non-combustible.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Use personal protection equipment.

### Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. Ensure

adequate ventilation. Do not touch or walk through spilled material. Use personal protective

equipment as required. Wash thoroughly after handling.

**Other information** Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Use appropriate personal protective equipment (PPE). Carefully shovel or sweep up spilled

material and place in suitable container. Avoid generating dust.

### Section 7: Handling and storage

Precautions for safe handling

Advice on safe handling Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. Ensure

adequate ventilation. Take off contaminated clothing and wash before reuse. Use personal

protection equipment. Wash thoroughly after handling.

General hygiene considerations Regular cleaning of equipment, work area and clothing is recommended. Do not eat, drink

or smoke when using this product. Wash hands before breaks and immediately after

handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from

moisture. Keep container closed when not in use.

Incompatible materials Hydrofluoric acid. Phosphorus pentoxide. Water. Water of crystallisation. Moisture. Steam.

Aluminium.

### Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits

No value assigned for this specific material by Safe Work Australia. However, Workplace

Exposure Standard(s) for constituent(s):

	Chemical name	Australia	New Zealand	ACGIH TLV
	Calcium oxide 1305-78-8	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
	Crystalline silica (Quartz) 14808-60-7	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.025 mg/m <sup>3</sup>	TWA: 0.025 mg/m³ respirable particulate matter
	Magnesium oxide 1309-48-4	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m³ inhalable particulate matter
	Limestone 1317-65-3	-	TWA: 10 mg/m <sup>3</sup>	-
	Aluminium oxide 1344-28-1	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 1 mg/m³ respirable particulate matter
ĺ	Iron (III) oxide 1309-37-1	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m³ respirable particulate matter

Chemical name	European Union	United Kingdom	Germany DFG
Calcium oxide	-	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>
1305-78-8		TWA: 2 mg/m <sup>3</sup>	Peak: 2 mg/m <sup>3</sup>
		STEL: 4 mg/m <sup>3</sup>	
		STEL: 6 mg/m <sup>3</sup>	
Crystalline silica (Quartz)	-	TWA: 0.1 mg/m <sup>3</sup>	-
14808-60-7		STEL: 0.3 mg/m <sup>3</sup>	

Magnesium oxide	- TWA: 10 mg/m <sup>3</sup>	TWA: 0.3 mg/m <sup>3</sup>
1309-48-4	TWA: 4 mg/m <sup>3</sup>	TWA: 4 mg/m <sup>3</sup>
	STEL: 30 mg/m <sup>3</sup>	Peak: 2.4 mg/m <sup>3</sup>
	STEL: 12 mg/m <sup>3</sup>	
Limestone	- TWA: 10 mg/m <sup>3</sup>	-
1317-65-3	TWA: 4 mg/m <sup>3</sup>	
	STEL: 30 mg/m <sup>3</sup>	
	STEL: 12 mg/m <sup>3</sup>	
Aluminium oxide	- TWA: 10 mg/m <sup>3</sup>	TWA: 4 mg/m <sup>3</sup>
1344-28-1	TWA: 4 mg/m <sup>3</sup>	TWA: 1.5 mg/m <sup>3</sup>
	STEL: 30 mg/m <sup>3</sup>	
	STEL: 12 mg/m <sup>3</sup>	
Iron (III) oxide	- TWA: 5 mg/m <sup>3</sup>	-
1309-37-1	TWA: 10 mg/m <sup>3</sup>	
	TWA: 4 mg/m <sup>3</sup>	
	STEL: 10 mg/m <sup>3</sup>	
	STEL: 30 mg/m <sup>3</sup>	
	STEL: 12 mg/m <sup>3</sup>	

Iron oxide fume (Fe2O3) (as Fe): 8hr TWA = 5 mg/m<sup>3</sup>

Silica Crystalline - Quartz (respirable dust): 8hr TWA = 0.05 mg/m³, Carcinogen Category 1A

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

Carcinogen Category 1A - established human carcinogen. There is sufficient evidence to establish a causal association between human exposure and the development of cancer.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

#### Appropriate engineering controls

### **Engineering controls**

Eyewash stations. Ventilation systems. Apply technical measures to comply with the occupational exposure limits. For bulk deliveries, closed pumping systems are recommended.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

### Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, DUST MASK.



**Eye/face protection** Tight sealing safety goggles.

**Skin and body protection** Wear suitable protective clothing. Boots. Overalls.

Hand protection Impervious gloves.

Respiratory protection If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator

meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

**Environmental exposure controls** No information available.

Thermal hazards No information available.

## Section 9: Physical and chemical properties

### Information on basic physical and chemical properties

Physical state Solid

**Appearance** Granular Amorphous Powder

Color Off-white Odor Slight

Odor threshold No information available

<u>Property</u> <u>Values</u> <u>Remarks • Method</u>

12.5-12.8 (1.65 g/L, 25°C, for CaO) None known Hq pH (as aqueous solution) No data available None known 2570°C Melting point / freezing point None known 2850°C Boiling point / boiling range None known Flash point Not applicable None known **Evaporation rate** No data available None known Flammability (solid, gas) No data available None known Flammability Limit in Air None known

Upper flammability or explosive No data available

limits

Lower flammability or explosive No data available

limits

Vapor pressureNo data availableNone knownVapor densityNo data availableNone known

Relative density 3.2-3.4

Reacts with water Water solubility None known Solubility(ies) No data available None known No data available None known **Partition coefficient** No data available None known **Autoignition temperature Decomposition temperature** No data available None known Kinematic viscosity No data available None known

Dynamic viscosity No data available

Other information

Bulk density 950-1050 kg/m<sup>3</sup>

### Section 10: Stability and reactivity

Reactivity

**Reactivity** Reacts exothermically on dilution with water. Reacts with acids.

Chemical stability

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**Stability** Crumbles on exposure to air. Readily absorbs carbon dioxide and moisture from air. Reacts

with water to form calcium hydroxide with evolution of heat. Becomes incandescent when

heated near its melting point.

**Explosion data** 

Sensitivity to mechanical impact None. Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions Reacts with water to form calcium hydroxide with evolution of heat.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

**Conditions to avoid** Exposure to air. Exposure to water. Moisture.

Incompatible materials

Incompatible materials Hydrofluoric acid. Phosphorus pentoxide. Water. Water of crystallisation. Moisture. Steam.

Aluminium.

Hazardous decomposition products

Hazardous decomposition products Calcium oxides.

### Section 11: Toxicological information

#### Information on likely routes of exposure

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety

Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is

mishandled and overexposure occurs are:

**Inhalation** Irritating to respiratory system. Inflammation of the respiratory passages, ulceration and

perforation of the nasal septum, and pneumonia have been attributed to inhalation of calcium oxide dust; severe irritation of the upper respiratory tract usually causes people to

avoid extreme exposure.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes skin irritation.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms May cause redness and tearing of the eyes. Erythema (skin redness). Coughing and/ or

wheezing. Difficulty in breathing. Irritation/Corrosion.

Acute toxicity .

Numerical measures of toxicity - Product Information

No information available

**Component Information** 

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Calcium oxide	-	-	> 6.04 mg/L (Rat) 4 h
Magnesium oxide	= 3990 mg/kg (Rat)	_	-

	= 3870 mg/kg (Rat)		
Aluminium oxide	> 5000 mg/kg (Rat)	-	-
Iron (III) oxide	> 10000 mg/kg (Rat)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation** Causes skin irritation.

**Serious eye damage/eye irritation** Causes serious eye damage.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Australia	European Union	IARC
Crystalline silica (Quartz) - 14808-60-7	Carc. 1A	-	Group 1
Iron (III) oxide - 1309-37-1	_	_	Group 3

### IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity No information available.

**STOT - single exposure** May cause respiratory irritation.

**STOT - repeated exposure**No information available.

**Aspiration hazard** No information available.

Chronic effects: The toxicity of crystalline silica is directly proportional to the ability of any particle to reach

the lower respiratory tract. Quartz particles with an aerodynamic diameter below 4um are likely to be most harmful to humans, as they reach the lower respiratory tract and are less

readily removed by the lungs.

Increases in lung cancer have been attributed to the inhalation of crystalline silica in a number of industries, including; ore mining, quarrying and granite works, ceramics, pottery,

refractory brick and diatomaceous earth industries and in foundry workers.

The International Agency for Research on Cancer has classified crystalline silica as a Type

1 Carcinogen - Carcinogenic to Humans, based on sufficient evidence in humans and

animals.

Increasing in vitro and in vivo evidence suggests that lung carcinomas in rats are a result of

marked and persistent inflammation and epithelial proliferation.

Crystalline silica also causes a range of non-neoplastic pulmonary effects, including; inflammation, silicosis, lymph node fibrosis, airways disease, emphysema and increased permeability of the airspace epithelium.

## Section 12: Ecological information

### **Ecotoxicity**

Aquatic ecotoxicity Keep out of waterways.

Chemical name	Algae/aquatic plants	Fish	Toxicity to	Crustacea
			microorganisms	
Calcium oxide	-	LC50: =1070mg/L (96h,	-	-
		Cyprinus carpio)		
Iron (III) oxide	-	LC50: =100000mg/L	-	-
		(96h, Danio rerio)		

**Terrestrial ecotoxicity** There is no data for this product.

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

**Bioaccumulation** There is no data for this product.

**Mobility** 

**Mobility** No information available.

Other adverse effects

Other adverse effects No information available.

### Section 13: Disposal considerations

Waste treatment methods

Waste from residues/unused

products

Recover or recycle if possible. Refer to Waste Management Authority. Dispose of material through a licensed waste contractor.

Contaminated packaging Empty containers

Empty containers should be taken to an approved waste handling site for recycling or

disposal.

See section 8 for more information

### Section 14: Transport information

ADG Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code

(ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.

<u>IATA</u> Classified as Dangerous Goods by the criteria of the International Air Transport Association

(IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN number 1910

UN proper shipping name CALCIUM OXIDE

Transport hazard class(es) 8
Packing group III

IMDG Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous

Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No information available

## Section 15: Regulatory information

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

### National regulations

### Australia

Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS). Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail: NON-DANGEROUS GOODS.

See section 8 for national exposure control parameters

### Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

Poison Schedule Number Not applicable

#### **Australian Industrial Chemicals Introduction Scheme (AICIS)**

Contact supplier for inventory compliance status

	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Calcium oxide - 1305-78-8	Present	-
Crystalline silica (Quartz) - 14808-60-7	Present	-
Magnesium oxide - 1309-48-4	Present	-
Limestone - 1317-65-3	Present	-
Aluminium oxide - 1344-28-1	Present	-
Iron (III) oxide - 1309-37-1	Present	-

### **Illicit Drug Precursors/Reagents**

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

### National pollutant inventory

Subject to reporting requirement

Chemical name	National pollutant inventory	
Magnesium oxide - 1309-48-4	10 tonne/yr Threshold category 1 fume	
	2000 tonne/yr Threshold category 2b fume	
	60000 MWH Threshold category 2b fume	
	20 MW Threshold category 2b fume	

**International Inventories** 

All the constituents of this material are listed on the Australian Inventory of Industrial

Chemicals.

NZIOC All the constituents of this material are listed on the New Zealand Inventory of Chemicals.

TSCA

DSL/NDSL

Contact supplier for inventory compliance status.

KECL

Contact supplier for inventory compliance status.

Contact supplier for inventory compliance status.

Contact supplier for inventory compliance status.

Legend:

**AIIC- Australian Inventory of Industrial Chemicals** 

NZIoC - New Zealand Inventory of Chemicals

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances
 IECSC - China Inventory of Existing Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

#### International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

### Section 16: Other information

Supplier Safety Data Sheet 10/2020

Reason(s) For Issue: 5 Yearly Revised Primary SDS

Updated Formulation

Prepared By

This Safety Data Sheet has been prepared by IXOM Operations Pty Ltd (Toxicology and

SDS Services).

Revision date: 26-Nov-2024

**Revision Note:** 

The symbol (\*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

SVHC: Substances of Very High Concern for Authorization:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances

STOT: Specific Target Organ Toxicity

ATE: Acute Toxicity Estimate LC50: 50% Lethal Concentration

LD50: 50% Lethal Dose

### Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

Ceiling Maximum limit value \* Skin designation

C Carcinogen

### Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR) U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

**Environmental Protection Agency** 

Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

National Institute of Technology and Evaluation (NITE)

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

Australian Industrial Chemicals Introduction Scheme (AICIS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)

U.S. National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications

Organization for Economic Co-operation and Development High Production Volume Chemicals Program

Organization for Economic Co-operation and Development Screening Information Data Set

World Health Organization

#### **Disclaimer**

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since IXOM Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their IXOM representative or IXOM Operations Pty Ltd at the contact details on page 1.

IXOM Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

**End of Safety Data Sheet**