

SAFETY DATA SHEET

1. Identification

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| Product identifier | BENTOMAT® |
| Other means of identification | None. |
| Recommended use | Not available. |
| Recommended restrictions | Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations. |

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

| | | | |
|-------------------------------|---|----------------|--|
| Company name | CETCO, an MTI Company | | |
| Address | 2870 Forbs Avenue Hoffman Estates, IL 60192 United States | | |
| Telephone | General Information | 800 527-9948 | |
| Website | http://www.cetco.com/LT/ | | |
| E-mail | safetydata@mineralstech.com | | |
| Emergency phone number | 1.866.519.4752 (US, CA, MX) | 1 760 476 3962 | |
| Americas | 1.866.519.4752 (US, Canada, Mexico) 1 760 476 3962 | | |

2. Hazard(s) identification

| | | |
|------------------------------|---|-------------|
| Physical hazards | Not classified. | |
| Health hazards | Carcinogenicity | Category 1A |
| | Specific target organ toxicity, repeated exposure | Category 1 |
| Environmental hazards | Not classified. | |
| OSHA defined hazards | Not classified. | |
| Label elements | | |



| | |
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| Signal word | Danger |
| Hazard statement | May cause cancer. Causes damage to organs through prolonged or repeated exposure. |
| Precautionary statement | |
| Prevention | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. |
| Response | If exposed or concerned: Get medical advice/attention. |
| Storage | Store locked up. |
| Disposal | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | 6.8% of the mixture consists of component(s) of unknown acute oral toxicity. 6.8% of the mixture consists of component(s) of unknown acute dermal toxicity. 6.8% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 6.8% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. |

3. Composition/information on ingredients

Mixtures

| Chemical name | Common name and synonyms | CAS number | % |
|--|--------------------------|------------|----------|
| QUARTZ (SIO ₂) | | 14808-60-7 | 5 - < 10 |
| CRISTOBALITE | | 14464-46-1 | 1 - < 3 |
| Other components below reportable levels | | | 90 - 100 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Occupational Exposure Limits for constituents are listed in Section 8. This product contains naturally occurring crystalline silica (not listed in Annex I of Directive 67/548/EEC) in quantities less than 6%.

4. First-aid measures

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| Inhalation | If symptoms are experienced, remove source of contamination or move victim to fresh air. Call a physician if symptoms develop or persist. |
| Skin contact | Wash off with soap and water. Get medical attention if irritation develops and persists. |
| Eye contact | Flush eyes immediately with large amounts of water. |
| Ingestion | Rinse mouth. Get medical attention if symptoms occur. |
| Most important symptoms/effects, acute and delayed | Prolonged exposure may cause chronic effects. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. |
| General information | IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). |

5. Fire-fighting measures

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| Suitable extinguishing media | Dry chemical, CO ₂ , water spray or regular foam. Use any media suitable for the surrounding fires. |
| Unsuitable extinguishing media | None known. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. |
| Fire fighting equipment/instructions | Use water spray to cool unopened containers. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | Not a fire hazard. No unusual fire or explosion hazards noted. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Wear a dust mask if dust is generated above exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | Avoid the generation of dusts during clean-up. This product is miscible in water. Collect dust or particulates using a vacuum cleaner with a HEPA filter. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS. None necessary. Reduce airborne dust and prevent scattering by moistening with water. |
| Environmental precautions | Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

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| Precautions for safe handling | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. |
|--------------------------------------|--|

Conditions for safe storage, including any incompatibilities

Store locked up. No special restrictions on storage with other products. Store in original tightly closed container. No special storage conditions required. Guard against dust accumulation of this material. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value | Form |
|---|------|------------------------|------------------|
| CRISTOBALITE (CAS 14464-46-1) | PEL | 0.05 mg/m ³ | Respirable dust. |
| QUARTZ (SiO ₂) (CAS 14808-60-7) | PEL | 0.05 mg/m ³ | Respirable dust. |

US. OSHA Table Z-3 (29 CFR 1910.1000)

| Components | Type | Value | Form |
|---|------|------------------------|----------------------|
| CRISTOBALITE (CAS 14464-46-1) | TWA | 0.05 mg/m ³ | Respirable. |
| | | 1.2 mppcf | Respirable. |
| QUARTZ (SiO ₂) (CAS 14808-60-7) | TWA | 0.1 mg/m ³ | Respirable. |
| | | 2.4 mppcf | Respirable. |
| Constituents | Type | Value | Form |
| TRADE SECRET | TWA | 5 mg/m ³ | Respirable fraction. |
| | | 15 mg/m ³ | Total dust. |
| | | 50 mppcf | Total dust. |
| | | 15 mppcf | Respirable fraction. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|---|------|-------------------------|----------------------|
| CRISTOBALITE (CAS 14464-46-1) | TWA | 0.025 mg/m ³ | Respirable fraction. |
| QUARTZ (SiO ₂) (CAS 14808-60-7) | TWA | 0.025 mg/m ³ | Respirable fraction. |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value | Form |
|---|------|------------------------|------------------|
| CRISTOBALITE (CAS 14464-46-1) | TWA | 0.05 mg/m ³ | Respirable dust. |
| QUARTZ (SiO ₂) (CAS 14808-60-7) | TWA | 0.05 mg/m ³ | Respirable dust. |

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls

If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear dust goggles.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Other

Use of an impervious apron is recommended. No special protective equipment required.

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| Respiratory protection | Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Eye wash fountain is recommended. Use good industrial hygiene practices in handling this material. |

9. Physical and chemical properties

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| Appearance | The product consists of bentonite granules between geotextile layers |
| Physical state | Solid. |
| Form | Solid. Mat or Fabric |
| Color | Various. |
| Odor | None. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | Not flammable |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not explosive |
| Flammability limit - upper (%) | Not explosive |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | 0.00001 hPa estimated |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Negligible |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |
| Percent volatile | 0 % estimated |
| VOC | CARB |

10. Stability and reactivity

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|---|---|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Stable at normal conditions. |
| Possibility of hazardous reactions | Will not occur. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Powerful oxidizers. Chlorine. None known. |

Hazardous decomposition products None known.

11. Toxicological information

Information on likely routes of exposure

Inhalation Prolonged inhalation may be harmful.
Skin contact No adverse effects due to skin contact are expected.
Eye contact Direct contact with eyes may cause temporary irritation.
Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Not known.

| Components | Species | Test Results |
|------------|---------|--------------|
|------------|---------|--------------|

CRISTOBALITE (CAS 14464-46-1)

Acute

Oral

| | | |
|------|-----|---------------|
| LD50 | Rat | > 22500 mg/kg |
|------|-----|---------------|

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Mild irritant to eyes (according to the modified Kay & Calandra criteria)

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization According to the classification criteria of the European Union, the product is not considered as being a skin irritant.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity 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 in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (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) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

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|---|---------------------------|
| CRISTOBALITE (CAS 14464-46-1) | 1 Carcinogenic to humans. |
| QUARTZ (SiO ₂) (CAS 14808-60-7) | 1 Carcinogenic to humans. |

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

| | |
|---|--------|
| CRISTOBALITE (CAS 14464-46-1) | Cancer |
| QUARTZ (SiO ₂) (CAS 14808-60-7) | Cancer |

US. National Toxicology Program (NTP) Report on Carcinogens

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|---|--|
| CRISTOBALITE (CAS 14464-46-1) | Known To Be Human Carcinogen. |
| | Reasonably Anticipated to be a Human Carcinogen. |
| QUARTZ (SiO ₂) (CAS 14808-60-7) | Known To Be Human Carcinogen. |

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

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|---|--|
| Specific target organ toxicity - repeated exposure | Causes damage to organs through prolonged or repeated exposure. |
| Aspiration hazard | Not an aspiration hazard. |
| Chronic effects | <p>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 in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (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.)</p> <p>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)</p> <p>According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Some of the components of this product are hazardous in the respirable form. However, because of the physical nature of this product, dust generation is not expected.</p> |

12. Ecological information

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|--------------------------------------|---|
| Ecotoxicity | The product is not expected to be hazardous to the environment. This product is not expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. |
| Persistence and degradability | No data is available on the degradability of this product. |
| Bioaccumulative potential | No data available. |
| Mobility in soil | No data available. |
| Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

13. Disposal considerations

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| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. Material should be recycled if possible. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |

14. Transport information

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|---|-----------------------------------|
| DOT | Not regulated as dangerous goods. |
| IATA | Not regulated as dangerous goods. |
| IMDG | Not regulated as dangerous goods. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |

15. Regulatory information

US federal regulations OSHA Process Safety Standard: This material is not known to be hazardous by the OSHA Highly Hazardous Process Safety Standard, 29 CFR 1910.119.
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

| | |
|--------------------------------|-----------------------|
| CRISTOBALITE (CAS 14464-46-1) | Cancer |
| QUARTZ (SIO2) (CAS 14808-60-7) | Cancer |
| CRISTOBALITE (CAS 14464-46-1) | lung effects |
| QUARTZ (SIO2) (CAS 14808-60-7) | lung effects |
| CRISTOBALITE (CAS 14464-46-1) | immune system effects |
| QUARTZ (SIO2) (CAS 14808-60-7) | immune system effects |
| CRISTOBALITE (CAS 14464-46-1) | kidney effects |
| QUARTZ (SIO2) (CAS 14808-60-7) | kidney effects |

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No (Exempt)

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

Food and Drug Administration (FDA) Total food additive
Indirect food additive
GRAS food additive

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

California Proposition 65



WARNING: This product can expose you to QUARTZ (SIO2), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

QUARTZ (SIO2) (CAS 14808-60-7) Listed: October 1, 1988

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

CRISTOBALITE (CAS 14464-46-1)
QUARTZ (SIO2) (CAS 14808-60-7)

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|----------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | No |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| Taiwan | Taiwan Chemical Substance Inventory (TCSI) | No |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

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|-----------------------------|--|
| Issue date | 19-September-2014 |
| Revision date | 09-July-2018 |
| Version # | 24 |
| Further information | This safety datasheet only contains information relating to safety and does not replace any product information or product specification. |
| HMIS® ratings | Health: 3* Flammability: 0 Physical hazard: 0 |
| NFPA ratings | Health: 2 Flammability: 0 Instability: 0 |
| Disclaimer | <p>The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The manufacturer expressly does not make any representations, warranties, or guarantees as to its accuracy, reliability or completeness nor assumes any liability, for its use. It is the user's responsibility to verify the suitability and completeness of such information for each particular use.</p> <p>Third party materials: Insofar as materials not manufactured or supplied by this manufacturer are used in conjunction with, or instead of this product, it is the responsibility of the customer to obtain, from the manufacturer or supplier, all technical data and other properties relating to these and other materials and to obtain all necessary information relating to them. No liability can be accepted in respect of the use of this product in conjunction with materials from another supplier. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. CETCO, an MTI Company cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.</p> |
| Revision information | This document has undergone significant changes and should be reviewed in its entirety. |