

## Methyl Sulfonal Methane (MSM)

Version number: 2.0

### SECTION 1: Identification

#### 1.1 Product identifier

|                                 |                                             |
|---------------------------------|---------------------------------------------|
| Identification of the substance | dimethyl sulphone                           |
| Trade name                      | <b><u>Methyl Sulfonal Methane (MSM)</u></b> |
| CAS number                      | 67-71-0                                     |

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

|                          |                                                  |
|--------------------------|--------------------------------------------------|
| Relevant identified uses | Laboratory chemical<br>Manufacture of substances |
|--------------------------|--------------------------------------------------|

#### 1.3 Details of the supplier of the safety data sheet

|                                |                              |
|--------------------------------|------------------------------|
| Valudor Products, LLC          | Telephone: +1 (760) 635 8500 |
| 179 Calle Magdalena Suite 100  | e-mail: info@valudor.com     |
| Encinitas, California CA 92024 | Website: www.valudor.com     |
| United States                  |                              |

#### 1.4 Emergency telephone number

|                                                       |                         |
|-------------------------------------------------------|-------------------------|
| Emergency information                                 | 800-535-5053 (Infotrac) |
| As above or nearest toxicological information center. |                         |

### SECTION 2: Hazard(s) identification

#### 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

| Classification |                  |            |                           |                  |
|----------------|------------------|------------|---------------------------|------------------|
| Section        | Hazard class     | Category   | Hazard class and category | Hazard statement |
| B,cD           | combustible dust | Comb. Dust | cD                        | OSHA003          |

For full text of abbreviations: see SECTION 16

#### 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

|             |               |
|-------------|---------------|
| Signal word | warning       |
| Pictograms  | Not required. |

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## Hazard statements

**OSHA003**

May form combustible dust concentrations in air.

## 2.3 Other hazards

Dust explosion hazards.

## Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                          |                                                |
|--------------------------|------------------------------------------------|
| <b>Name of substance</b> | dimethyl sulphone                              |
| <b>Identifiers</b>       |                                                |
| CAS No                   | 67-71-0                                        |
| <b>Molecular formula</b> | C <sub>2</sub> H <sub>6</sub> O <sub>2</sub> S |
| <b>Molar mass</b>        | 94.13 g/mol                                    |

## SECTION 4: First-aid measures

### 4.1 Description of first-aid measures

#### General notes

Self-protection of the first aider.

Remove affected person from the danger area and lay down.

Do not leave affected person unattended.

Take off immediately all contaminated clothing.

In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following inhalation

Provide fresh air.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

#### Following skin contact

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

#### Following eye contact

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

#### Following ingestion

Rinse mouth. Do not induce vomiting.

Let water be drunken in little sips (dilution effect).

Get medical advice/attention if you feel unwell.

#### Notes for the doctor

None.

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

This information is not available.

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

None.

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

water, foam, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO<sub>2</sub>)

#### Unsuitable extinguishing media

water jet

### 5.2 Special hazards arising from the substance or mixture

Combustible.

Hazardous decomposition products: Section 10.

Danger of dust explosion.

#### Hazardous combustion products

carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), sulfur oxides (SO<sub>x</sub>), toxic gases/vapours

### 5.3 Advice for firefighters

Keep containers cool with water spray.

In case of fire and/or explosion do not breathe fumes.

Coordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

#### Special protective equipment for firefighters

Wear self-contained breathing apparatus

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Do not breathe dust.

Avoid contact with skin and eyes.

Control of dust.

Eliminate all ignition sources if safe to do so.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

#### For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

### 6.2 Environmental precautions

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Keep away from drains, surface and ground water.  
Retain contaminated washing water and dispose of it.  
If substance has entered a water course or sewer, inform the responsible authority.

## 6.3 Methods and material for containment and cleaning up

### Advice on how to contain a spill

Covering of drains.  
Take up mechanically.

### Advice on how to clean up a spill

Take up mechanically.  
Collect spillage.

### Other information relating to spills and releases

Place in appropriate containers for disposal.  
Ventilate affected area.

## 6.4 Reference to other sections

Hazardous combustion products: see section 5.  
Personal protective equipment: see section 8.  
Incompatible materials: see section 10.  
Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.  
Keep away from sources of ignition - No smoking.  
Take precautionary measures against static discharge.  
Removal of dust deposits.  
Only vacuum cleaners containing no ignition sources may be used for combustible dusts.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Use only non-sparking tools.

#### Specific notes/details

Layers, deposits and heaps of combustible dust must be considered, like any other source which can form a hazardous explosive atmosphere.  
Danger of dust explosion.

#### Measures to protect the environment

Avoid release to the environment.  
Do not empty into drains; dispose of this material and its container at hazardous or special waste collection point.

#### Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.  
Remove contaminated clothing and protective equipment before entering eating areas.  
Do not breathe dust.  
Do not get in eyes, on skin, or on clothing.

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Wash hands after use.

Preventive skin protection (barrier creams/ointments) is recommended.

## 7.2 Conditions for safe storage, including any incompatibilities

### Explosive atmospheres

Removal of dust deposits.

Only vacuum cleaners containing no ignition sources may be used for combustible dusts.

### Flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Take precautionary measures against static discharge.

Ground/bond container and receiving equipment.

### Incompatible substances or mixtures

Incompatible materials: see section 10.

Store away from oxidizing agents.

### Protect against external exposure, such as

humidity, heat

### Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

### Ventilation requirements

Provision of sufficient ventilation.

### Specific designs for storage rooms or vessels

Store in a dry place.

### Packaging compatibilities

Keep only in original container.

## 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

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

| Occupational exposure limit values (Workplace Exposure Limits) |                                      |        |            |           |             |            |              |          |              |
|----------------------------------------------------------------|--------------------------------------|--------|------------|-----------|-------------|------------|--------------|----------|--------------|
| Country                                                        | Name of agent                        | CAS No | Identifier | TWA [ppm] | TWA [mg/m³] | STEL [ppm] | STEL [mg/m³] | Notation | Source       |
| US                                                             | Particulates not otherwise regulated | -      | PEL (CA)   | -         | 10          | -          | -            | dust     | Cal/OSHA PEL |
| US                                                             | Particulates not otherwise regulated | -      | PEL (CA)   | -         | 5           | -          | -            | r        | Cal/OSHA PEL |

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| Occupational exposure limit values (Workplace Exposure Limits) |                                              |        |            |           |             |            |              |                 |                  |
|----------------------------------------------------------------|----------------------------------------------|--------|------------|-----------|-------------|------------|--------------|-----------------|------------------|
| Country                                                        | Name of agent                                | CAS No | Identifier | TWA [ppm] | TWA [mg/m³] | STEL [ppm] | STEL [mg/m³] | Notation        | Source           |
| US                                                             | particulates not otherwise classified (PNOC) | -      | PEL        | -         | 15          | -          | -            | dust            | 29 CFR 1910.1000 |
| US                                                             | particulates not otherwise classified (PNOC) | -      | PEL        | 1,765     | -           | -          | -            | partml, dust    | 29 CFR 1910.1000 |
| US                                                             | particulates not otherwise classified (PNOC) | -      | PEL        | 529.5     | -           | -          | -            | partml, r, dust | 29 CFR 1910.1000 |
| US                                                             | particulates not otherwise classified (PNOC) | -      | PEL        | -         | 5           | -          | -            | r               | 29 CFR 1910.1000 |
| US                                                             | particulate not otherwise regulated          | -      | REL        | -         | -           | -          | -            | appx-D          | NIOSH REL        |

## Notation

appx-D see Appendix D - Substances with No Established RELs

dust as dust

partml particles/ml

r respirable fraction

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

## 8.2 Exposure controls

### Appropriate engineering controls

Use local and general ventilation.

### Individual protection measures (personal protective equipment)

#### Eye/face protection

Wear eye/face protection.

#### Hand protection

| Protective gloves       |                          |                                          |
|-------------------------|--------------------------|------------------------------------------|
| Material                | Material thickness       | Breakthrough times of the glove material |
| PVC: polyvinyl chloride | no information available | no information available                 |
| rubber                  | no information available | no information available                 |

Wear suitable gloves.

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Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

## Body protection

Protective clothing for use against solid particulates.

## Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Particle filter device (DIN EN 143).

## Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

|                |                        |
|----------------|------------------------|
| Physical state | solid<br>(crystalline) |
|----------------|------------------------|

|       |       |
|-------|-------|
| Color | white |
|-------|-------|

#### Particle characteristics

|               |              |
|---------------|--------------|
| Particle size | 425 – 850 µm |
|---------------|--------------|

|      |                 |
|------|-----------------|
| Odor | Nearly odorless |
|------|-----------------|

|                |                |
|----------------|----------------|
| Odor threshold | not determined |
|----------------|----------------|

#### Other safety parameters

|            |                                                                       |
|------------|-----------------------------------------------------------------------|
| pH (value) | 4.6 (in aqueous solution: 1 wt%, 29 °C)<br>(ECHA, OECD Guideline 122) |
|------------|-----------------------------------------------------------------------|

|                              |              |
|------------------------------|--------------|
| Melting point/freezing point | 108 – 110 °C |
|------------------------------|--------------|

|                                                          |                     |
|----------------------------------------------------------|---------------------|
| Boiling point or initial boiling point and boiling range | 238 °C at 1,013 hPa |
|----------------------------------------------------------|---------------------|

|             |                        |
|-------------|------------------------|
| Flash point | 143 °C<br>(closed cup) |
|-------------|------------------------|

|                  |                |
|------------------|----------------|
| Evaporation rate | not determined |
|------------------|----------------|

|                           |                                                           |
|---------------------------|-----------------------------------------------------------|
| Flammability (solid, gas) | this material is combustible, but will not ignite readily |
|---------------------------|-----------------------------------------------------------|

|                  |                |
|------------------|----------------|
| Explosive limits | not determined |
|------------------|----------------|

|                                 |                |
|---------------------------------|----------------|
| Explosion limits of dust clouds | not determined |
|---------------------------------|----------------|

|                |                   |
|----------------|-------------------|
| Vapor pressure | 0.981 Pa at 25 °C |
|----------------|-------------------|

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(ECHA, calculated)

## Density and/or relative density

Density  $\geq 0.75 \text{ g/cm}^3$

Bulk density  $\geq 0.7 \text{ g/cm}^3$

Relative vapour density not relevant (solid)

## Solubility(ies)

Water solubility 186,394 mg/l at 30 °C  
(OECD Guideline 105)

## Partition coefficient

n-octanol/water (log KOW) -1.41

Soil organic carbon/water (log KOC) 1.809  
(ECHA, OECD Guideline 121)

Auto-ignition temperature not determined

Decomposition temperature not relevant

Viscosity not relevant  
(solid)

Explosive properties dust explosion hazards

Oxidizing properties none

Information for relevant hazard classes according to GHS there is no additional information

**9.2 Other information** there is no additional information

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.  
See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

Danger of dust explosion.

### 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Take precautionary measures against static discharge.  
Control of dust.

### 10.5 Incompatible materials

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oxidizers, Perchloric acid, perchlorates

## 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

Hazardous combustion products: see section 5.

Carbon monoxide (CO).

Sulfur oxides (SO<sub>x</sub>).

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgment (weight of evidence determination).

#### Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

##### Acute toxicity

Shall not be classified as acutely toxic (oral).

Shall not be classified as acutely toxic (dermal).

##### Inhalation.

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

| Exposure route | Endpoint | Value        | Species | Method | Source |
|----------------|----------|--------------|---------|--------|--------|
| oral           | LD0      | >2,000 mg/kg | rat     | -      | ECHA   |
| dermal         | LD0      | >5,000 mg/kg | rabbit  | -      | ECHA   |

##### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

(ECHA, OECD Guideline 439)

##### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

(ECHA)

##### Respiratory or skin sensitization

###### Skin sensitization

Shall not be classified as a skin sensitizer.

(ECHA, OECD Guideline 429)

##### Respiratory sensitization

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

##### Germ cell mutagenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

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## Carcinogenicity

### IARC Monographs

not listed

### National Toxicology Program (United States)

not listed

### OSHA Carcinogens

Not listed.

## Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

## Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## 11.2 Other information

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Aquatic toxicity (acute)

Based on available data, the classification criteria are not met.

| Endpoint | Exposure time | Value      | Species                         | Method             | Source |
|----------|---------------|------------|---------------------------------|--------------------|--------|
| LC50     | 96 h          | >100 mg /l | zebra fish (Danio rerio)        | OECD Guideline 203 | ECHA   |
| ErC50    | 72 h          | >100 mg /l | algae (Scenedesmus subspicatus) | OECD Guideline 201 | ECHA   |

#### Aquatic toxicity (chronic)

No data available.

### 12.2 Persistence and degradability

#### Biodegradation

No data available.

#### Persistence

No data available.

### 12.3 Bioaccumulative potential

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Data are lacking, inconclusive, or conclusive but not sufficient for classification.

**n-octanol/water (log KOW)** -1.41

## 12.4 Mobility in soil

The substance is very mobile.

**The Organic Carbon normalised adsorption coefficient** 1.809  
(OECD Guideline 121)

## 12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## 12.6 Other adverse effects

Data are not available.

### Remarks

None.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains.

#### Waste treatment of containers/packages

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

### Remarks

Please consider the relevant national or regional provisions.

## SECTION 14: Transport information

**14.1 UN number** not subject to transport regulations

**14.2 UN proper shipping name** -

**14.3 Transport hazard class(es)** -

**14.4 Packing group** -

**14.5 Environmental hazards** -

**14.6 Special precautions for user** -

**14.7 Transport in bulk according to IMO instruments** -

### 14.8 Information for each of the UN Model Regulations

#### Transport of dangerous goods by road or rail (49 CFR US DOT) Additional information

Not subject to transport regulations.

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### National regulations (United States)

##### Toxic Substance Control Act (TSCA)

Substance is listed (ACTIVE)

##### Superfund Amendment and Reauthorization Act (SARA TITLE III )

##### The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

Not listed

##### Specific Toxic Chemical Listings (EPCRA Section 313)

Not listed

##### Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

##### List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Not listed

##### Clean Air Act

Not listed

##### Right to Know Hazardous Substance List

##### Toxic or Hazardous Substance List (MA-TURA)

Not listed

##### Hazardous Substances List (MN-ERTK)

Not listed

##### Hazardous Substance List (NJ-RTK)

Not listed

##### Hazardous Substance List (Chapter 323) (PA-RTK)

Not listed

##### Hazardous Substance List (RI-RTK)

Not listed

##### California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

Not listed

##### Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

Not listed

## SECTION 16: Other information, including date of preparation or last revision

Date of preparation: 2023-05-15

Date of last revision: 2025-07-09.

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## Abbreviations and acronyms

| Abbr.            | Descriptions of used abbreviations                                                                                                                                     |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 29 CFR 1910.1000 | 29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)                        |
| 49 CFR US DOT    | 49 CFR U.S. Department of Transportation                                                                                                                               |
| Cal/OSHA PEL     | California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)                                                                   |
| CAS              | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)                                                                 |
| DGR              | Dangerous Goods Regulations (see IATA/DGR)                                                                                                                             |
| ErC50            | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| GHS              | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations                                                              |
| IARC             | International Agency for Research on Cancer                                                                                                                            |
| IARC Monographs  | IARC Monographs on the Evaluation of Carcinogenic Risks to Humans                                                                                                      |
| IATA             | International Air Transport Association                                                                                                                                |
| IATA/DGR         | Dangerous Goods Regulations (DGR) for the air transport (IATA)                                                                                                         |
| IMDG             | International Maritime Dangerous Goods Code                                                                                                                            |
| LC50             | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval                      |
| NIOSH REL        | National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)                                                                      |
| OSHA             | Occupational Safety and Health Administration (United States)                                                                                                          |
| PBT              | Persistent, Bioaccumulative and Toxic                                                                                                                                  |
| PEL              | Permissible exposure limit                                                                                                                                             |
| ppm              | Parts per million                                                                                                                                                      |
| STEL             | Short-term exposure limit                                                                                                                                              |
| TWA              | Time-weighted average                                                                                                                                                  |
| vPvB             | Very Persistent and very Bioaccumulative                                                                                                                               |

## Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200 (May 20, 2024 eff. July 19, 2024).

Transport of dangerous goods by road or rail (49 CFR US DOT).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

## List of relevant phrases (code and full text as stated in section 2 and 3)

| Code    | Text                                             |
|---------|--------------------------------------------------|
| OSHA003 | May form combustible dust concentrations in air. |

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## Responsible for the safety data sheet

Chemical Regulatory Compliance Com- Telephone: +1 (630) 410-1660  
pany e-Mail: GHS@crc-us.com  
Jasper, GA Website: www.crc-us.com  
USA

## Disclaimer

This information is based upon the present state of our knowledge.  
This SDS has been compiled and is solely intended for this product.