

## Safety Data Sheet

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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: (2S,3S)-2,3,4-Trihydroxybutanal  
Compound ID: AG00I9IK  
CAS Number: 533-49-3

Identified uses: Laboratory chemicals, manufacture of chemical compounds

Company: Angene

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### 2. HAZARDS IDENTIFICATION

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, oral,(Category 4), H302  
Skin corrosion/irritation,(Category 2), H315  
Serious eye damage/eye irritation,(Category 2A), H319  
Specific target organ toxicity, single exposure; Respiratory tract irritation,(Category 3), H335  
For the full text of the H-Statements mentioned in this Section, see Section 16.

Pictogram	
Signal Word	warning
Hazard statements	
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
Precautionary statements	
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes.Remove contact lenses,if present and easy to do. Continue rinsing.

**Hazards not otherwise classified (HNOC) or not covered by GHS - none**

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name: (2S,3S)-2,3,4-Trihydroxybutanal  
CAS Number: 533-49-3  
Molecular Formula: C<sub>4</sub>H<sub>8</sub>O<sub>4</sub>  
Molecular Weight: 120.1000 g/mol

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### 4. FIRST AID MEASURES

#### Description of first aid measures

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

##### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

##### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2 or section 11)

**Indication of any immediate medical attention and special treatment needed**

no data available

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**5. FIREFIGHTING MEASURES****Extinguishing media Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special hazards arising from the substance or mixture**

Carbon oxides, nitrogen oxides (NO<sub>x</sub>), Hydrogen bromide gas

**Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Further information**

no data available

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**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**Environmental precautions**

Do not let product enter drains.

**Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**Reference to other sections**

For disposal see section 13.

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**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. For precautions see section 2.

**Conditions for safe storage, including any incompatibilities**

Keep in dry area.  
2-8°C.

**Specific end use(s)**

Apart from the uses mentioned in section 1, no other specific uses are stipulated

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

**Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment****Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

## Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

## Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## Control of environmental exposure

Do not let product enter drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance / Form:	solid
Odor:	no data available
Odor Threshold:	no data available
pH:	no data available
Melting point:	164 °C
Boiling point/range:	311.1°C at 760 mmHg
Flash point:	no data available
Evaporation rate:	no data available
Flammability:	no data available
Upper/lower flammability: explosive limits:	no data available
Vapor pressure:	no data available
Vapour density:	no data available
Relative density:	no data available
Water solubility:	no data available
Partition coefficient:	no data available
Auto-ignition temperature:	no data available
Decomposition Temp:	no data available
log Pow:	no data available
Viscosity:	no data available
Explosive properties:	no data available
Oxidizing properties:	no data available

**Other safety information** no data available

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## 10. STABILITY AND REACTIVITY

Reactivity:	no data available
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions	no data available
Conditions to avoid	no data available
Incompatible materials	no data available
Hazardous decomposition products	no data available
Other decomposition products:	no data available
In the event of fire:	see section 5

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## 11. TOXICOLOGICAL INFORMATION

Acute toxicity:	Classified based on available data. For more details, see section 2
Skin corrosion/irritation:	Classified based on available data. For more details, see section 2
Serious eye damage/irritation	Classified based on available data. For more details, see section 2
Respiratory or skin sensitisation	Classified based on available data. For more details, see section 2
Germ cell mutagenicity	Classified based on available data. For more details, see section 2
Carcinogenicity:	
IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity	

Specific target organ toxicity - single exposure	no data available
Specific target organ toxicity - repeated exposure	no data available
Aspiration hazard	no data available
Additional Information	no data available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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## 12. ECOLOGICAL INFORMATION

Toxicity	no data available
Persistence and degradability	no data available
Bioaccumulative potential	no data available
Mobility in soil	no data available
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects	no data available

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## 13. DISPOSAL CONSIDERATIONS

Waste treatment methods	Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging	Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

DOT (US)	This substance is considered to be non-hazardous for transport.
IMDG	This substance is considered to be non-hazardous for transport.
IATA	This substance is considered to be non-hazardous for transport.

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## 15. REGULATORY INFORMATION

SARA 302:	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards	Acute Health Hazard
Massachusetts Right To Know Components	No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components	
New Jersey Right To Know Components	
California Prop. 65 Components	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Eye Irrit.	Eye irritation
Skin Irrit.	Skin irritation
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Angene shall not be held liable for any damage resulting from handling or from contact with the above product. See invoice or packing slip for additional terms and conditions of sale.