

# MATERIAL SAFETY DATA SHEET

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PRODUCT NAME      Pana-Tetra (Zinc Oxide)

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## IDENTIFICATION OF THE SUBSTANCE

Chemical name      : Zinc oxide single crystal  
Content             : 99.9% or more  
Chemical formula   : ZnO  
ENCs No.           : 1-561 (Zinc Oxide)  
CAS No.            : 1314-13-2 (Zinc Oxide)

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## HAZARD IDENTIFICATION

Classification.     : Not applicable.  
Harmful             : There is stimulation for eyes and throats.

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## EMERGENCY & FIRST AID PROCEDURES

Eyes contact       : Flush with plenty of water immediately.  
                              In case of continuous pain, tears in excess, or continuous  
                              congestion etc, consult physician for medical attention.

Skin contact        : Wash off in flowing water or soapsuds.  
                              In case of pain, or inflammation etc, consult physician  
                              for medical attention..

Inhalation          : In case of coughing, losing breath, or feeling stimulation in the  
                              throat and the respiratory organ etc, move to the fresh air at  
                              once. If symptom doesn't settle, consult physician for medical  
                              attention.

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## FIRE FIGHTING PROCEDUES

Extinguish fire by the method suitable for the surroundings.  
(This material itself is nonflammable.)

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## TREATMENT AT ACCIDENTAL LEAKAGE

Remove by vacuum cleaner etc, avoiding powder to be airborne.

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## HANDLING AND STORAGE

Handling            : Install the local exhaust in the work area where powder might  
                              become airborne. Wear an appropriate protection tool in order  
                              not to inhale and not to touch eyes and the skins.

Storage             : Store in the storage place.

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## EXPOSURES CONTROLES & PERSONAL PROTECTION

### Occupational Exposure Limits

Japan Society for Occupational Health: Level 2 Dust

|           |                   |                      |
|-----------|-------------------|----------------------|
| A C G I H | Respirable dust   | 1mg/ m <sup>3</sup>  |
|           | Total dust        | 4mg/ m <sup>3</sup>  |
|           | : Respirable dust | 5mg/ m <sup>3</sup>  |
|           | Total dust        | 10mg/ m <sup>3</sup> |

Ventilation : Install the local exhaust in the work area where powder might become airborne.

Protective equipment : Wear an antidust mask, protection glasses, and protection gloves in response to the situation.

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## PHYSICAL AND CHEMICAL PROPERTIES

|                     |                                   |
|---------------------|-----------------------------------|
| Appearance          | : White odorless powder           |
| Melting point       | : 1720 °C                         |
| Specific gravity    | : 5.78                            |
| Solubility in water | : 4.2 ppm (Distilled water: 18°C) |

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## TOXICOLOGICAL INFORMATION

|                       |  |
|-----------------------|--|
| Stimulation           | : There is stimulation for eyes and throats.     |
| Acute toxicity (LD50) | : Oral administration on mice over 7,950 mg/ kg. |

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## DISPOSAL INFORMATION

Disposal procedures in compliance with local, state and federal laws and regulations.

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## TRANSPORT INFORMATION

Avoid wetting or other careless handling to maintain product quality.

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## REGULATORY INFORMATION

Unknown.

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## DISCLAIMER

To the best of our knowledge, the information contained herein is accurate. However, we do not assume any liability whatever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

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