

# MATERIAL SAFETY DOCUMENT STANDARD

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## Section 1. Chemical Information

- 1) Brand Name : COTIOX (KA-100)
- 2) Chemical Name : Titanium Dioxide (TiO<sub>2</sub>)  
Anatase, Titanium Dioxide (TiO<sub>2</sub>), Titanium Oxide,
- 3) General chemical features  
As an inorganic pigment, it is very stable physically and chemically and has very high degree of whiteness with outstanding tinting strength and hiding power.
- 4) Application of the product  
Rubber, Paper, Ink, Paint, Plastics, TV CRT Tube, Tile, Textile Printing, and etc.

## Section 2. Composition / Information on Ingredients

- 1) Ingredient : Titanium Dioxide
- 2) CAS NO.: 13463-67-7
- 3) Content : 98.0% min

## Section 3. Hazards Identification

- 1) Emergency Overview :  
Odorless, tasteless, and white crystals.  
Do not breathe the dust. Do not contact on eyes, skin, and garments.

Containers need to make airtight. Wash out after handling the product.  
Need to be treated with proper ventilation.

## 2) Potential Health Effects

- Inhalation :

Short Term Exposure : Irritating

Long Term Exposure : May have adverse effects on lungs

- Skin Contact :

Short Term Exposure : No Information on significant adverse effect

Long Term Exposure : No Information on significant adverse effect

- Ingestion :

Short Term Exposure : No Information on significant adverse effect

Long Term Exposure : No Information on significant adverse effect

## 3) Carcinogen Status :

OSHA : None

NTP : None

IARC : None

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## Section 4. First Aid Measures

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### 1) Inhalation :

Seek Fresh air immediately. If necessary, perform CPR.

Keep the patient warm and comfortable. If needed, seek medical advice.

### 2) Skin Contact :

Remove contaminating clothing and shoes immediately. Wash out with soap or mild detergent and large amount of water until no evidence of chemical remains (at least 15-20minutes). If needed, seek medical advice.

### 3) Eye Contact :

Wash eyes immediately with large amount of water or normal water or normal saline solution occasionally lifting

upper and lower lids until no evidence of chemical remains. If needed, seek medical advice.

### 4) Ingestion :

If vomiting occurs, keep head lower than hips to help prevent intake.

If needed, seek medical advice.

### 5) Antidote

No particular antidote. If needed, seek medical advice.

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## **Section 5. Fire Fight Measures**

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- 1) Fire and Explosion Hazards : Neglectful fire hazards.
- 2) Suitable Fire Extinguishing Media :  
Use proper extinguishing agents for surrounding fire.
- 3) Extinguishment :  
No serious hazards found. First remove the containers from fire if possible.  
Do not inhale the vapor or dust. Stand against the wind when extinguishing.
  - Flash Point : N/A
  - Explosive Upper Properties : N/A
  - Explosive Lower Properties : N/A
  - Natural Inflammable Point : N/A
- 4) Harmful Thermal Decomposition Products :  
Fire may produce toxic thermal decomposition products.

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## **Section 6. Accidental Release Measures**

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- 1) Release when operating :  
Incase of spilling large amount of product, scoop spills into clean, dry and closed containers for recovery and disposal. Avoid generating dust. Sweep the remains with high-performance corpuscular filter vacuum cleaner.

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## **Section 7. Handling and Storage**

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Store and handle in accordance with all current related environmental regulations and standards of local communities and the government.

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## **Section 8. Exposure Controls / Personal Protection**

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- 1) OSHA : TWA 10mg/m<sup>3</sup>  
ACGIH : TWA 10mg/m<sup>3</sup>  
DFG MAK : TWA 6mg/m<sup>3</sup>
- 2) Exposure Measurement Method :  
Corpuscular Filter, Acid, Atomic Light-Absorption Measurement Device
- 3) Ventilation :  
Install confined ventilation system.

Ensure compliance with applicable exposure limits

4) Eye Protection :

Wear safety glasses or goggles.

5) Emergency for Eye Contact :

Provide an emergency eye wash fountain and quick drench shower equipment in the operation area.

6) Skin Protection :

Protective Clothing is not required. However, avoid repeated and continuous skin contact.

7) Hand Protection :

Standard industrial type rubber gloves are not required, but recommended.

8) Respiratory Protection :

- If vapor concentration is suspected to be high :

use a pressure-demand or other positive-pressure mode in combination with separate escape supply.

- Escape : any air-purifying respirator with a full face piece and a high efficiency specialized filter

- In case of fire or danger to life or health :

Any supplied air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with separate escape supply Certain respiratory protection with self-efficiency breathing apparatus with a full face piece

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## Section 9. Physical and Chemical Properties

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1) Appearance : odorless, tasteless, and white crystals

2) Molecular Weight : 79.88

3) Molecular Formula : TiO<sub>2</sub>

4) Boiling Point : 4532–5432F (2500-3000C)

5) Melting Point : 3317–3362F (1825-1850C)

6) Vapor Pressure : Not Applicable

7) Vapor Density : Not Applicable

8) Specific Gravity (water=1) : 3.84-4.26

9) Water Solubility : Insoluble

10) pH: Neutral (10% suspension)

11) Volatility : Not Applicable

12) Solvent Solubility :

Soluble : Hot concentrated sulfuric acid, hydrofluoric acid, Alkali

Insoluble : Hydrochloric acid, Nitric Acid, diluted sulfuric acid

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## Section 10. Stability and Reactivity

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- 1) Reactivity : stable at room temperature and pressure
- 2) Conditions to avoid : avoid generating dust
- 3) Materials to avoid : not reported
- 4) Hazardous Decomposition Products :  
Fire may produce toxic thermal decomposition products.
- 5) Polymerization:  
Not reported about harmful polymerization under conditions of normal use.

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## Section 11. Toxicological Information

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- 1) Irritation Data : 300mg/3days
- 2) Carcinogen Status :  
IARC : Human inadequate evidence, animal limited evidence  
Group 3 : ACGIH : A4 – Not classified as human carcinogen
- 3) Acute Toxicity Level : Moderately toxic in inhalation  
Toxicity Data : 6820mg/m<sup>3</sup>-4hours inhalation – RAT LC 50; 24000mg/kg  
ORAL-RAT LD50
- 4) Effects on trace organs : N/A
- 5) Medical Conditions aggravated by exposure : Respiratory Disorders  
Teratogenicity : No known teratogenic effects  
Mutagenicity : No known mutagenic effects
- 6) Effects on health :
  - Inhalation :  
Acute Exposure : May cause irritation and coughs by inhalation.  
Dust may cause unpleasant deposition on throat.  
Chronic Exposure : N/A
  - Skin contact :  
Acute Exposure : No topically toxic and no chemically irritating  
Chronic Exposure : 300mg/3days, intermittent human skin - mild
  - Eye Contact :

Acute Exposure : No irritating

Chronic Exposure : N/A

- Ingestion :

Acute Exposure : Biologically inactivated, but causing stomach problem

Chronic Exposure : N/A

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## **Section 12. Ecological Information**

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1) Ecological Effect Index (0-4) : N/A

2) Ecotoxicity : N/A

3) Decomposition : N/A

4) Bioaccumulation Potential Index (BCF) : N/A

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## **Section 13. Disposal Considerations**

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Dispose in accordance with all current related environmental regulations and standards of local communities and the government.

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## **Section 14. Transportation Information**

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No classification assigned.

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## **Section 15. Regulatory Information**

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1) Korean Regulation :

Industrial safety and health law : acceptable

2) U.S. Regulation :

TSCA INVENTION STATUS : Y

CERCLA SECTION 103 (40CFR302.4) : Not listed

SARA SECTION 302 (40CFR355.30) : N

SARA SECTION 304 (40CFR355.40) : N

SARA HAZARD CATEGORIES. SARA SECTION 311/312 (40CFR370.21) :

ACUTE : N

CHRONIC : N

FIRE : N

REACTIVE : N

SUDDEN RELEASE : N

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**Section 16. Other Information**

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The above data are made based on the Material Safety and Health Data issued by Korean Industrial Safety Organization.

This data do not provide guarantee for legal responsibility for toxic chemicals and are just for research and confirmation of your esteemed company.

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