

SAFETY DATA SHEETS

1. Chemical product and company identification

Chemical Name	Dispersion of Titanium Dioxide
Product Name	DIS-AB-10W
Company Name	Sakai Chemical Industry Co.,Ltd.
Division Name	Advanced Materials Department
Section Name	Development & Technology Section
Address	110 tajuku, shimogawa, izumimachi, iwaki, fukushima 971-8183 JAPAN
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Recommended Use	Cosmetics

2. Hazard identification**GHS Classification¹⁾**

Physical hazards :	Explosives	Not applicable	
	Flammable gases	Not applicable	
	Flammable aerosols	Not classified	
	Oxidizing gases	Not applicable	
	Gases under pressure	Not applicable	
	Flammable liquids	Not classified	
	Flammable solids	Not applicable	
	Self-reactive substances	Not applicable	
	Pyrophoric liquids	Not classified	
	Pyrophoric solids	Not applicable	
	Self-heating substances	Not classified	
	Substances which, in contact with water, emit flammable gases	Not classified	
	Oxidizing liquids	Not classified	
	Oxidizing solids	Not applicable	
	Organic peroxides	Not applicable	
	Corrosive to metals	Classification not possible	
	Health hazards :	Acute toxicity (Oral)	Not classified
		Acute toxicity (Dermal)	Not classified
		Acute toxicity (Gases)	Not applicable
		Acute toxicity (Vapors)	Classification not possible
Acute toxicity (Dusts)		Not applicable	
Acute toxicity (Mists)		Classification not possible	
Skin corrosion/irritation		Not classified	
Serious eye damage/eye irritation		Category 2B	
Respiratory sensitization		Classification not possible	
Skin sensitization		Not classified	
Germ cell mutagenicity		Not classified	
Carcinogenicity		Classification not possible	
Productive toxicity		Classification not possible	
Specific target organs systemic toxicity (Single exposure)		Classification not possible	
Specific target organs systemic toxicity (Repeated exposure)		Classification not possible	
Aspiration hazard	Classification not possible		
Environmental hazards :	Hazardous to the aquatic environment(acute)	Classification not possible	
	Hazardous to the aquatic environment(long-term)	Category 4	
	Hazardous to the ozone layer	Classification not possible	

Label elements ¹⁾

Labeling or symbol : none
 Signal words : Warning
 Hazard statements : Eye irritation
 May cause long lasting harmful effects to aquatic life

Precautionary statements :

Prevention Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Wash hands thoroughly after handling.
 Avoid release to the environment.

Response IF INHALED : Remove victim to fresh air and keep at rest
 in a position comfortable for breathing.
 IF IN EYES : 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.
 Get medical advice/attention if you feel unwell.
 Leakage shall be recovered.

Storage Store container tightly closed in well-ventilated place.

Disposal Dispose of contents in accordance
 with local/regional/national/international regulation.

3. Composition/information on ingredients

Substance or mixture : mixture
 Common name of chemical name : Dispersion of Titanium dioxide in water

Chemical name	General name	CAS No.	Class reference No. in the JPN Gazetted list	Concentration or Concentration range
Titanium dioxide	TiO ₂	13463-67-7	(1)-558	32~42%
Hydrated silica	SiO ₂ · nH ₂ O	1343-98-2	(1)-548	6.0~16%
Hydrogen Dimethicone	Hydrogen Dimethicone	68037-59-2	(7)-477	1.0~10%
Water	H ₂ O	7732-18-5	-	20~30%
1,3-Butyleneglycol	CH ₂ CHOHCH ₂ CH ₂ OH	107-88-0	(2)-235	8.0~18%
Dispersant (Silicone)	-	-	-	7.0~17%

Hazardous constituents to contribute to the GHS classification: Titanium dioxide

Hereinafter, titanium dioxide of the main ingredients is indicated.

4. First-aid measures

Description of first aid measures

IF INHALED : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 If symptoms (e.g. nausea or headache) continue, call a POISON CENTER or doctor/physician.

IF ON SKIN : In case of skin irritation or discomfort, stop using the product.
 Wash with plenty of water.
 If symptoms continue, call a POISON CENTER or doctor/physician.

IF IN EYES : Rinse cautiously with water for 15 -20 minutes.
 Remove contact lenses, if present and easy to do. Continue rinsing.
 If symptoms continue, call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. Slowly drink 1-4 cups of water or milk for diluting content of the stomach.
 But if caused clouding of consciousness, coma or spasm, giving nothing and call doctor/physician

Expected immediate and delayed symptoms :

Redness of skin and eyes.

Protection of first-aiders

First-aiders should wear suitable protective equipment for eyes and skin and respirator depending on situations.

5. Fire-fighting measures

Suitable extinguishing media: Not combustible.

Unsuitable extinguishing media : Use an extinguishing media that is suitable for the materials involved in the surrounding fire.

Specific hazard: Generating dust.

Specific fire fighting methods: Take action from windward.
Keep out except responsible personnel.
Move container to a safe area if it can be done without risk.

Protection for firefighters: Firefighters should wear a full set of protective clothing, including a breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures :
Off-limit except responsible personnel.
Wear suitable protective equipment (See Section 8) to prevent any contamination of skin or eyes.

Environmental precautions :
Avoid release into the environment because product may cause local effects.
May cause long lasting harmful effects to aquatic life.

Methods for containment and cleaning up :
Scoop up material and all contaminated soil for later disposal.
Not to generate dust.

Prevention of secondary hazards:
Keep floor clean each time because the substance may causes slip when it gets wet.

7. Handling and storage

Handling Technical measures(Ventilation) : Described in "8. Exposure controls/personal protection".

Caution : Containers should be protected from physical damage.
Avoid inhalation and ingestion.
Do not get in eyes.
Do not breathe dust.
Wash hands thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Do not eat, drink or smoke when using this product.

Storage Technological countermeasure: Store dangerous and hazardous materials, or install and ventilation system to handle the product.

Conditions for safe storage: Described in "10. Stability and reactivity".

Safety Conditions : Store in a fixed place under less humid atmosphere.

Safety container : No requirements.

8. Exposure controls/personal protection

Exposure limit :	ACGIH (2006) OSHA	TLV-TWA PEL-TWA	10mg/m ³ A4 (Not classifiable as a human carcinogen) 15mg/m ³
Facilities :	Japan SOH :		1 mg/m ³ (as titanium dioxide, respirable dust) 4 mg/m ³ (as titanium dioxide, total dust)
	ACGIH TLV-TWA (2006):		10 mg/m ³ (as titanium dioxide)
	OSHA PEL-TWA:		15 mg/m ³
Personal protective equipment			
Respirator :			Wear appropriate respirator.
Hands :			Wear appropriate gloves.
Eyes :			Wear safety glasses with side shields.
Skin :			Wear appropriate protective clothing.
Equipment measures:			Install ventilation system if may produce dust/fume/ vapor/gas.
Hygiene :			Do not eat, drink or smoke around the handling place. Wash hands and face well after handling. Wash contaminated work clothing before reuse.

9. Physical and chemical properties

Appearance :	White powder.
Odor :	No data.
pH :	Titanium Dioxide is neutral (litmus paper) in condition of water suspension (1:10). 5)
Melting point/freezing point :	1820~1850 degrees-C 3)
Boiling range :	2500~3000 degrees-C 3)
Flash point :	Incombustibles 5)
Explosive limits :	Incombustibles 5)
Vapor pressure :	No data Sulfuric acid
Relative density :	4.2 (Rutile) 3)
Solubility :	Insoluble in water and organic solvents. Soluble in heated conc. Sulfuric acid.
Partition coefficient (n-octanol/water):	No data.
Auto ignition temperature :	No data.
Decomposition temperature :	No data.
Olfactory threshold:	No data.
Evaporation rate (BuAc = 1) :	Not applicable.
Flammability (solid, gas) :	Incombustibles. 4)
Viscosity :	Not applicable.

10. Stability and reactivity

Reactivity:	Titanium dioxide is nonreactive in general conditions.
Chemical Stability :	Titanium dioxide is stable in general conditions.
Conditions to avoid :	Creating dust.
Possibility of hazardous reactions :	None reasonably foreseeable.
Incompatible materials :	None reasonably foreseeable.
Hazardous decomposition products :	No information.

11. Toxicological information

Acute toxicity :	Oral	Rat	LD50	>10000mg/kg ⁶⁾
	Dermal	Rabbit	approx. LD50	>10000mg/kg ⁶⁾
	Inhalation(vapor)		No information.	
	Inhalation(dust)	Rat	LC50	>6.82mg/L (4hours) ⁶⁾
Skin corrosion/irritation :		Rabbit	: not irritating. ⁶⁾	
Serious eye damage/ irritation :			Category 2B (Causes eye irritation).	
		Rabbit	: mild irritation. ⁶⁾	
Respiratory sensitization :			No information.	
Skin sensitization :		Human	: Negative (patch-test) ⁶⁾	
Germ cell mutagenicity :		Mouse	: Negative (micronucleus test, chromosome aberration test) ⁷⁾	
Carcinogenicity :			In epidemiological reseach about the carcinogenicity to human in Europe and North America, there is no causal relationship between exposure to titanium dioxide and carcinogenicity. However information is too insufficient to sort out.	
Reproductive toxicity :			No information.	
STOST-single exposure :			Lethal dose by oral administration in rat is more than 20000mg/kg ⁸⁾ , and ingestion 1 pound of titanium dioxide dosen't show any harmful effect in human ⁹⁾ . Therefore oral administration fall under the category of 「Not classified」. However data of ingestion through other route is too insufficient to sort out.	
STOST-repeated exposure :			In oral administration, it fall under the category of 「Not classified」. Because there is no effect in the administration of titanium dioxide via diet for 13 or 103 weeks in rats and mouse ¹⁰⁾ . On the other hand, pneumoconiosis changes were observed, without changes of pulmonary function, in just a little number of workers exposed more than 20 years ⁸⁾ . However epidemiological reseach were did after that, most of them couldn't show a hard evidence of causal relationship. Moreover, significant harmful effect wasn't observed in inhalation exposure for 2 years in rats. So in inhalation exposure, it fall under the category of 「Not classified」. However there is no data in dermal exposure, so it is 「classification not possible」.	
Aspiration hazard :			No information	

12. Ecological information

Hazardous to the aquatic environment(acute):	Classification not possible A crustacea species 48 hour EC50 >1000000 μ g/L (AQUIRE, 2003) Insoluble in water
Hazardous to the aquatic environment(long-term):	Category 4 The behavior of titanium dioxide in water is unknown.
Eco-toxicity:	No relevant information found.
Biodegradability:	No relevant information found.
Bioaccumulation potential:	No relevant information found.
Mobility in soil:	No relevant information found.
Hazardous to the ozone layer:	No relevant infomartion found.

13. Disposal considerations

Remaining product :	Dispose of waste in accordance with applicable local, regional and international regulations and standards. When disposing, consult to a certificated waste trader or local offices if they deal with the waste. May rapidly produce large amount of gas if heated.
Contaminated containers and packaging	Used container should be recycled after cleaning or dispose of in compliance with related laws and local regulations. Contents should be removed completely when dispose of empty containers.

14. Transport information

International regulation :	Transporting by sea : Not dangerous goods Marine Pollutant : Not relevant Transporting by air : Not dangerous goods
Peculiar protection :	Containers should be protected from direct sunlight, fall, shock, corrosion etc. Pallets with containers should not be stacked up.
Special security measures :	When transporting, avoid direct sunlight and ensure appropriate measures to prevent loading damage, falling containers or leaking wet the product.
UN Number :	Not applicable.
Class :	Not applicable.

15. Regulatory information

Montreal Protocol :	Not listed
Stockholm Convention :	Not listed
Rotterdam Convention :	Not listed

16. Other information

This product contains nanomaterials and nanomaterial ensembles which at least one dimensions of three-dimensional indicating the size is 1 nm - 100 nm.

References	1) GHS Classification (2010) "National Institute of Technology and Evaluation" 2) IARC RECENTRY EVALUATED "TITANIUM DIOXIDE" 5. SUMMELY OF DATA REPORTED POSTED 27 FEBRUARY (2006) 3) ICSC (2002) 4) Günter Hommel (1991) 5) HSDB (2005) 6) IUCLID (2000) 7) NTP DB (2005) 8) DFGOT vol.2 (1991) 9) ACGIH(2001) 10) NTP TR No.97(1979)
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17. Caution

- This information may be amended in the light of newly acquired knowledge and/or test results.
- The information provided has been prepared on the basis of materials, knowledge, data, etc. which are currently available.
However, the information given on the contents, physical properties, and the hazardous or harmful nature of the product cannot be guaranteed.
- Cautions are given on the handling of the product in normal circumstances.
If the product is to be used in a special manner, precautionary measures must be taken appropriate to such usage.
- Since any chemical product is liable to have unknown harmful effects, very careful handling is always necessary.
Users are advised that it is their responsibility to establish safe conditions for handling the product.