SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
GB/T 16483-2008, GB/T 17519-2013

Product Name TiONA® 595, TiONA® 696, TiONA® 813 / CR-813, TiONA® 822 / CR-822, TiONA® 826 / CR-826, TiONA® 828 / CR-828, TiONA® 834 / CR-834, TiONA® 880 / CR-880, TiONA® 8140 / 8140, TiONA® 41J / 41J, TiONA® 828E / CR-828E.
Revision date 10-Aug-2020 **(M)SDS Number** TIONA_TMP
Issuing Date 12-Nov-2019 **Version** 3

1. Identification

Product identifier

Product Name TiONA® 595, TiONA® 696, TiONA® 813 / CR-813, TiONA® 822 / CR-822, TiONA® 826 / CR-826, TiONA® 828 / CR-828, TiONA® 834 / CR-834, TiONA® 880 / CR-880, TiONA® 8140 / 8140, TiONA® 41J / 41J, TiONA® 828E / CR-828E.

Other means of identification

(M)SDS Number TIONA_TMP

CAS No. 13463-67-7

Synonyms Titanium dioxide

Details of the supplier of the safety data sheet

Supplier
Tronox Commercial Office
Room 2404, 24th Floor
HuaNeng Union Mansion No 958
Lujiazui Ring Road
Pudong New Area Shanghai 200120
P.R. China
Telephone: 86.21.6100.6288
Fax: 86.21.6886.5955

E-mail address chemprodsteward@tronox.com

Emergency telephone number

Emergency telephone number CHEMTREC (International): +1 703 741 5970
CHEMTREC (China): 4001-204937

National contact 4001-204937

Recommended use of the chemical and restrictions on use

Recommended use Pigment

Restrictions on use No information available

Uses advised against Manufacture of food products; Perfumes, fragrances; Pharmaceuticals; Cosmetics, personal care products.

2. Hazard(s) identification

Emergency Overview

No significant adverse health effects

Appearance Powder **Physical state** Solid **Odor** None

Classification of the substance or mixture

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Hazard statements
Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Physical and chemical hazards
Not applicable.

Health hazards
Immediate Health Effects: Not applicable.
Chronic effects: Not applicable.

Environmental hazards
Not applicable

Other hazards which do not result in classification
The suppliers of Trimethylolpropane (TMP) have classified the chemical as a suspected reproductive toxicant. The available toxicology data which forms the basis of this classification is under review, therefore, the reproductive toxicity classification could be subject to change.

3. Composition/information on ingredients

Substance

Not applicable

CAS No. 13463-67-7

Mixture

Synonyms Titanium dioxide

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS).

Chemical name	Weight-%	CAS No
Titanium dioxide	> 80	13463-67-7
Trimethylolpropane (TMP)	< 0.45	77-99-6

4. First-aid measures

Description of necessary first aid measures

General advice No hazards which require special first aid measures.

Inhalation Remove to fresh air. If symptoms persist, call a physician.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms/effects, acute and delayed Inhalation of dust in high concentration may cause irritation of respiratory system.

For emergency responders Use personal protective equipment as required.

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical Avoid generation of dust.

Hazardous combustion products Non-combustible.

Special protective actions for fire-fighters Protective equipment and precautions for firefighters.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Avoid contact with eyes and skin. Use personal protective equipment as required.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. Handling and storage

Precautions for safe handling Ensure adequate ventilation. Avoid contact with skin and eyes. Avoid generation of dust. Use personal protection equipment. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing is recommended. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace.

Conditions for safe storage, including any incompatibilities Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials None known.

8. Exposure controls/personal protection

Occupational exposure limits

Chemical name	China	ACGIH TLV
Titanium dioxide - 13463-67-7	TWA: 8 mg/m^3 total dust G2B(C**)	TWA: 10 mg/m^3

Note See section 16 for terms and abbreviations

Biological occupational exposure limits
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring and observation processes
No applicable information was found.

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection No special protective equipment required.

Hand protection Wear suitable gloves: Impervious gloves. Wash face, hands and any exposed skin thoroughly after handling.

Respiratory protection None under normal use conditions. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General hygiene considerations	Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing is recommended. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace.
Thermal hazards	None under normal processing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Powder
Color	white
Physical state	Solid
Odor	None
Odor threshold	Not applicable

Property	**Values**	**Remarks • Method**
pH	6-9	10g/100ml aqueous solution
Melting point / freezing point	1830 °C	Melting point / melting range
Boiling point / boiling range	2972 °C	-
Flash point	No data available	Not applicable
Evaporation rate		Not applicable
Flammability (solid, gas)		Not flammable
Flammability Limit in Air		Not applicable
Upper flammability or explosive limits	Not applicable	
Lower flammability or explosive limits	Not applicable	
Vapor pressure	No data available	Not applicable
Vapor density		Not applicable
Relative density	3.7-4.1	(water = 1)
Water solubility	Insoluble in water	-
Solubility(ies)	Insoluble in common solvents	-
Partition coefficient		No data available
Autoignition temperature		Not applicable
Decomposition temperature		Not applicable
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable

Additional information

Explosive properties	Not an explosive
Oxidizing properties	No information available
VOC Content (%)	None
Bulk density	0.4 - 0.8 g/cm3

10. Stability and reactivity

Stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.

Reactivity Stable.

Sensitivity to mechanical impact Not impact sensitive.
Sensitivity to static discharge Not sensitive.

Hazardous polymerization None under normal processing.

Conditions to avoid Dust formation.

Incompatible materials None known.

Hazardous decomposition products None known.

11. Toxicological information

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Titanium dioxide	> 5000 mg/kg (Rat)	-	> 6,82 mg/L (Rat) 4 h
Trimethylolpropane (TMP)	= 14000 mg/kg (Rat) = 14100 mg/kg (Rat)	-	> 0.29 mg/L (Rat) 4 h

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

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

Carcinogenicity Titanium dioxide is listed by IARC as possibly carcinogenic to humans (Group 2B). This listing is based on inadequate evidence of carcinogenicity in humans and sufficient evidence in experimental animals. In lifetime inhalation studies of rats, airborne respirable-size titanium dioxide particles have been shown to cause lung tumors at concentrations associated with substantial particle lung burdens and consequential pulmonary overload and inflammation. However, other laboratory animals such as mice and hamsters did not develop lung tumors under similar testing with titanium dioxide. Furthermore, human epidemiology studies do not suggest an association between occupational exposure to titanium dioxide and risk for cancer.
Trimethylolpropane is not suspected of being carcinogenic.

Chemical name	China	IARC
Titanium dioxide	Possibly carcinogenic to humans	Group 2B

Legend
China
Suspected human carcinogen
IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans

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

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

Teratogenicity None known.

Specific target organ toxicity (single exposure) Based on available data, the classification criteria are not met.

Specific target organ toxicity (repeated exposure) Based on available data, the classification criteria are not met.

Other adverse effects None known.

Aspiration hazard No information available.

12. Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Titanium dioxide	ErC50: >100 mg/l (72h, Pseudokirchneriella subcapitata	LC50: >1000 mg/l (96h, Pimephales promelas)	-
Trimethylolpropane (TMP)	-	LC50: =21700mg/L (48h, Cyprinodon)	EC50: 10330 - 16360mg/L (48h, Daphnia magna) EC50: =13000mg/L (48h, Daphnia species)

Persistence and degradability Titanium Dioxide, is an inorganic metal oxide, therefore this does not apply. Trimethylolpropane is readily biodegradable and does not bioaccumulate.

Bioaccumulative potential Material does not bioaccumulate.

Component Information

Chemical name	Partition coefficient
Trimethylolpropane (TMP)	-2.37

Mobility in soil Not mobile.

Mobility Not mobile.

Other adverse effects None known.

13. Disposal considerations

Waste chemicals Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

IMDG Not regulated

IATA Not regulated

China Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Law of the People's Republic of China on Prevention and Control of Occupational Diseases

Catalog of occupational hazard factors: Not applicable.
Catalog of occupational diseases: Not applicable.

Chemical name	Category
Titanium dioxide	Inhalation of dust/particles

Regulations on the Control over Safety of Hazardous Chemicals
Inventory of hazardous chemicals Not applicable.

GB 18218-2009 Identification of major hazard installations for dangerous chemicals Not applicable

List of hazardous chemicals under priority management Not applicable

Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used
Inventory of highly toxic goods Not applicable

Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals
List of toxic chemicals severely restricted for import and export in China Not applicable

Measures for the Environmental Management of New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances Complies

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. Other information

Prepared By Product Stewardship

Issuing Date 12-Nov-2019

Revision date 10-Aug-2020

Revision Note SDS sections updated:
1, Emergency telephone number.
3, Composition/information on ingredients.

Abbreviations and acronyms
Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet