

**ARTISTRI™ P3590 WHITE PIGMENT INK**

Version 2.0

Revision Date 05/15/2015

Ref. 130000129509

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : ARTISTRI™ P3590 WHITE PIGMENT INK
Product Use : Printing ink

Restrictions on use : Do not use product for anything outside of the above specified uses
Manufacturer/Supplier : DuPont
974 Centre Road
Wilmington, DE 19805, USA

Product Information : 1-302-774-1000
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Specific target organ toxicity - repeated exposure Category 2

Label content

Pictogram :



Signal word : Warning

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Hazardous warnings : May cause damage to organs through prolonged or repeated exposure.
(Kidney)

Hazardous prevention : Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
measures Get medical advice/ attention if you feel unwell.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 47.588 %

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Ethane-1,2-diol	107-21-1	10 - 20 %
Titanium dioxide	13463-67-7	<20 %

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

Inhalation : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If breathing is irregular or stopped, administer artificial respiration. Get medical attention.

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- Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.
- Eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical advice/attention.
- Ingestion : If swallowed, call a poison control centre or doctor immediately. Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center.
- Most important symptoms/effects, acute and delayed : No applicable data available.
- Protection of first-aiders : No applicable data available.
- Notes to physician : No specific intervention is indicated. Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray, Dry chemical, Carbon dioxide (CO₂)
- Unsuitable extinguishing media : No applicable data available.
- Specific hazards : Hazardous decomposition products formed under fire conditions. (see also section 10) Avoid breathing decomposition products.
- Special protective equipment for firefighters : Exposure to decomposition products may be a hazard to health. Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : Evacuate personnel to safe areas. Stop spill/release if it can be done with minimal risk. Do not allow run-off from fire fighting to enter drains or water courses.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Wear suitable protective equipment.
- Environmental precautions : Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Clean contaminated floors and objects thoroughly while observing environmental regulations.
- Spill Cleanup : Contain spill. Soak up with inert absorbent material. Collect and contain contaminated absorbent and dike material for disposal. Keep in suitable, closed containers for disposal. Ventilate the area. Clean contaminated floors and objects thoroughly while observing environmental regulations.
- Accidental Release Measures : Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid inhalation, ingestion and contact with skin and eyes. Do not use in areas without adequate ventilation. For personal protection see section "Exposure controls/personal protection"
Handle in accordance with good industrial hygiene and safety practice. Keep container closed. Keep away from food and drink. Wash hands before eating, drinking, or smoking. Remove contaminated clothing and protective equipment before entering eating areas. Wash contaminated clothing before re-use.
- Handling (Physical Aspects) : Normal measures for preventive fire protection.
- Dust explosion class : No applicable data available.
- Storage : Keep containers tightly closed in a cool, well-ventilated place. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material. Do not reuse empty container.
Stable under normal conditions.
- Storage period : No applicable data available.


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Storage temperature : No applicable data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Ensure adequate ventilation. Maintain air concentrations below occupational exposure standards. General mechanical ventilation is normally adequate but use local exhaust where necessary to maintain exposures below acceptable limits.

Personal protective equipment
Respiratory protection : No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.

Hand protection : Material: Impervious gloves
Additional protection: Gloves must be inspected prior to use., Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough., The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., The exact break through time can be obtained from the protective glove producer and this has to be observed., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Eye protection : Wear safety glasses or coverall chemical splash goggles.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Lightweight protective clothing and safety shoes are recommended.

**Exposure Guidelines
Exposure Limit Values**

Ethane-1,2-diol			
TLV	(ACGIH)	100 mg/m3	TLV-C Aerosol.
AEL *	(DUPONT)	10 mg/m3	8 & 12 hr. TWA Particulate.
AEL *	(DUPONT)	50 ppm	8 & 12 hr. TWA Vapor.


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Titanium dioxide			
Permissible exposure limit:	(OSHA)	15 mg/m ³	8 hr. TWA Total dust.
TLV	(ACGIH)	10 mg/m ³	TWA
AEL *	(DUPONT)	10 mg/m ³	8 & 12 hr. TWA Total dust.
AEL *	(DUPONT)	5 mg/m ³	8 & 12 hr. TWA Respirable dust.

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : liquid
 Form : Aqueous solution
 Color : white

Odor : not significant

Odor threshold : No applicable data available.

pH : 7.0 - 9.0

Melting point/range : No applicable data available.

Boiling point/boiling range : No applicable data available.

Flash point : >93.34 °C

Evaporation rate : No applicable data available.

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : No applicable data available.

Lower explosion limit : No applicable data available.

Vapour Pressure : No applicable data available.

Vapour density : No applicable data available.

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Density	: 1.16 g/cm3
Specific gravity (Relative density)	: No applicable data available.
Water solubility	: miscible
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable under recommended conditions of storage, use and temperature. Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	: None reasonably foreseeable.
Conditions to avoid	: Avoid extreme heat. Stable at normal temperatures and storage conditions. Do not freeze. Do not expose to temperatures above: 93.34 °C (200.01 °F)
Incompatible materials	: Acids, bases and strong oxidizing agents
Hazardous decomposition products	: No decomposition if stored and applied as directed. Under fire conditions:, Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

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SECTION 11. TOXICOLOGICAL INFORMATION**ARTISTRI™ P3590 WHITE PIGMENT INK**

Further information : No data is available on the product itself. Information given is based on data on the components.

Ethane-1,2-diol

Inhalation : no data available

Dermal LD50 : > 3,500 mg/kg , Mouse

Oral LD50 : 1,650 mg/kg , Cat

Skin irritation : No skin irritation, Rabbit

Eye irritation : No eye irritation, Rabbit

Skin sensitization : Does not cause skin sensitisation., human

Repeated dose toxicity : Oral
Rat
-
Target Organs: Kidney
Kidney damage

Carcinogenicity : Not classifiable as a human carcinogen.
Animal testing did not show any carcinogenic effects.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Reproductive toxicity : No toxicity to reproduction
No effects on or via lactation
Animal testing showed no reproductive toxicity.

Teratogenicity : Evidence suggests the substance is not a developmental toxin in animals.

Titanium dioxide

Inhalation 4 h LC50 : > 6.82 mg/l , Rat

Dermal LD50 : > 10,000 mg/kg , Rabbit


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Oral LD50	:	> 5,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	No eye irritation, Rabbit
Skin sensitization	:	Does not cause skin sensitisation., Guinea pig Does not cause respiratory sensitisation., Mouse
Repeated dose toxicity	:	Oral Rat - NOAEL: 1,000 mg/kg Method: OECD Test Guideline 408 No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	:	Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	:	Animal testing showed no reproductive toxicity.
Teratogenicity	:	Animal testing showed no developmental toxicity.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

Material	IARC	NTP	OSHA
Titanium dioxide	2B		


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SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Ethane-1,2-diol

- 96 h LC50 : Pimephales promelas (fathead minnow) 72,860 mg/l
- 96 h ErC50 : Pseudokirchneriella subcapitata (green algae) 6,500 mg/l
- 48 h EC50 : Daphnia magna (Water flea) > 100 mg/l OECD Test Guideline 202

Titanium dioxide

- 96 h LC50 : Pimephales promelas (fathead minnow) > 1,000 mg/l
- 72 h ErC50 : Pseudokirchneriella subcapitata (green algae) > 100 mg/l see user defined free text
- 72 h NOEC : Algae 5,600 mg/l see user defined free text
- 48 h EC50 : Daphnia magna (Water flea) > 100 mg/l OECD Test Guideline 202

Environmental Fate

Ethane-1,2-diol

- Biodegradability : Readily biodegradable 90 - 100 % OECD Test Guideline 301
- Bioaccumulation : Bioaccumulation is unlikely.

Additional ecological information : No data is available on the product itself. Information given is based on data on the components.

SECTION 13. DISPOSAL CONSIDERATIONS

- Waste disposal methods - Product : If recycling is not practicable, dispose of in compliance with local regulations. Never place unused product down any indoor or out door drain.
- Waste disposal methods - Container : Do not reuse empty container. Contaminated/not cleaned containers should be treated/handled like product waste. Dispose of container properly. Refer to applicable Local, State/Provincial, and Federal Regulations, as well as industry Standards.

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Contaminated packaging : No applicable data available.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA : On the inventory, or in compliance with the inventory

SARA 313 Regulated
Chemical(s) : Ethane-1,2-diolPA Right to Know
Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a
concentration of 1% or more (0.01% for Special Hazardous Substances):
Glycerol, Ethane-1,2-diol, Titanium dioxideNJ Right to Know
Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present
at a concentration of 1% or more (0.1% for substances identified as
carcinogens, mutagens or teratogens): Glycerol, Ethane-1,2-diol, Titanium
dioxideCERCLA Reportable
Quantity : 33501 lbs
Based on the percentage composition of this chemical in the product.:
Ethane-1,2-diolCalifornia Prop. 65 : WARNING! This product contains a chemical or chemicals known to the State
of California to cause cancer. Titanium dioxide**SECTION 16. OTHER INFORMATION**

The DuPont Oval Logo is a registered trademark of E.I. du Pont de Nemours and Company.



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