

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 1. Identification

Product Identifier: Multi-Tech White Ink
Chemical Name: Mixture
CAS Number: Mixture
Other Means of Identification: MCO-1550, MCO-1560, MCO-1395, MCO-1397, HP-1500, HPO-1550, TM-149
Product Type: Solid

Relevant identified uses of the substance or mixture and uses advised against

Product USE: Industrial Applications. Screen Printing

Supplier's Details: **Multi-Tech, Inc.**
5101 Penrose St., St. Louis, MO 63115
314-382-9881

Emergency Telephone Number: CHEMTREC: 800-424-9300 (24hrs for spill, leak, fire, exposure or accident).

Section 2. Hazard(s) Identification

This mixture has not been evaluated as a composite item. The information provided herein on the health effects of this ink is based on its individual components, supplied to the manufacturer by its raw material suppliers. All ingredients are bound and potential for hazardous exposure as shipped is minimal. During the curing/drying process, however, some vapors may be released and the end-user must take necessary precautions, like providing proper ventilation and/or respiratory protection, to protect employees.

GHS Product Identifier: Not Applicable - None
Chemical Name: Mixture
CAS Number: Mixture
Product Type: Solid
Prevention: No GHS prevention statements
Response: No GHS prevention statements
Storage: No GHS prevention statements
Disposal: No GHS prevention statements
Label Elements: No Signal Word

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 3. Composition/Information on Ingredients

Substance/Mixture: Mixture
Chemical Name: Mixture
CAS Number: N/A

Ingredient Name	%	CAS Number
Titanium Dioxide	10 - 25	13463-67-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First Aid Measures

Description of first aid measures:

Eye contact: Flush eyes with water, occasionally lifting the upper and lower eyelids. Remove any contact lenses. Get medical attention if irritation occurs.

Inhalation: Move victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact: Flush contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion: Wash out mouth with water. Move victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Seek medical attention if necessary.

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 4. First Aid Measures

Description of most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: No known significant effects or critical hazards.
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: No specific data.
Inhalation: No specific data.
Skin contact: No specific data.
Ingestion: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested.
Specific treatments: No specific treatment.
Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media: In case of fire, use water spray (fog), foam, dry chemical or CO₂.
Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: No specific fire or explosion hazard.

Hazardous thermal decomposition products: May emit Hydrogen Chloride (HCl). Decomposition may include the following materials: carbon dioxide, carbon monoxide, halogenated compounds metal oxide/oxides.

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 5. Fire-Fighting Measures (continued)

**Special protective actions
for fire-fighters:**

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment
for fire-fighters:**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders:

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions:

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill:

Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill:

Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 7. Handling and Storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area. Keep container closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure Controls/Personal Protection

Control parameters

Occupational exposure limits

Ingredient Name	Exposure Limits
Titanium Dioxide	OSHA PEL 1989 (1989-03-01) PEL: Permissible Exposure Level 10 mg/m ³ Form: Total dust OSHA PEL (1993-06-30) PEL: Permissible Exposure Level 15 mg/m ³ Form: Total dust NIOSH REL (1994-06-01) ACGIH TLV (1996-05-18) TLV-TWA: Threshold Limit Value - Time weighted average PEL: Permissible Exposure Level 10 mg/m ³

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 8. Exposure Controls/Personal Protection (continued)

- Appropriate engineering controls:** Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection:** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin protection:**
- Hand protection:** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved.
- Other skin protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed.
- Respiratory protection:** Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 9. Physical and Chemical Properties

Appearance

Physical state	Solid [Paste.]
Color:	WHITE
Odor:	Faint.
Odor threshold:	Not available.
pH:	Not available.
Melting point:	Not available.
Boiling point:	Not available.
Flash point:	> 212 °F (> 100 °C)
Burning time:	Not available.
Burning rate:	Not available.
Evaporation rate:	Not available.
Flammability (solid, gas):	Not available.
Lower and upper explosive (flammable) limits:	Lower: Not available. Upper: Not available.
Vapor pressure:	Not available.
Vapor density:	Not available.
Relative density:	Not available.
Solubility:	Not available.
Solubility in water:	insoluble in water.
Partition coefficient:	
n- octanol/water:	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
SADT:	Not available.
Viscosity:	Dynamic: Not available. Kinematic: Not available.

Section 10. Stability and Reactivity

Reactivity:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability:	Stable under recommended storage and handling conditions (see Section 7).
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	Keep away from extreme heat and oxidizing agents.
Incompatible materials:	Avoid contact with acetal homopolymers and acetyl homopolymers during processing.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 11. Toxicological Information

This mixture has not been evaluated as a whole for health effects. Exposure effects listed are based on existing health data for the individual components which comprise the mixture.

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
	LC50 Inhalation	Rat - Male	6.82 Mg/l	4 h
	LD50 Dermal	Rabbit	> 5,000 mg/kg	-

Conclusion/Summary Mixture. Not fully tested.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Titanium dioxide	Skin - Mild irritant	Human		72 hrs	

Conclusion/Summary

Skin: Mixture. Not fully tested.

Eyes: Mixture. Not fully tested.

Respiratory: Mixture. Not fully tested.

Sensitization

Conclusion/Summary

Skin: Mixture. Not fully tested.

Respiratory: Mixture. Not fully tested.

Mutagenicity

Conclusion/Summary: Mixture. Not fully tested.

Carcinogenicity

Conclusion/Summary: Mixture. Not fully tested.

Product/ingredient name	OSHA	IRAC	NTP
Titanium dioxide		2B	

Reproductive toxicity

Conclusion/Summary: Mixture. Not fully tested.

Teratogenicity

Conclusion/Summary: Mixture. Not fully tested.

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 11. Toxicological Information (continued)

Specific target organ toxicity (single exposure): Not available.

Specific target organ toxicity (repeated exposure): Not available.

Aspiration hazard: Not available.

Information on the likely routes of exposure: Not available.

Potential acute health effects

Eye contact: No known significant effects or critical hazards.

Inhalation: No known significant effects or critical hazards.

Skin contact: No known significant effects or critical hazards.

Ingestion: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: No specific data.

Inhalation: No specific data.

Skin contact: No specific data.

Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Potential chronic health effects

Conclusion/Summary: Mixture. Not fully tested.

General: No known significant effects or critical hazards.

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates: Not available.

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 12. Ecological Information

Toxicity

Product/ingredient name	Result	Species	Exposure
Titanium dioxide			
	Acute LC50 > 1,000,000 µg/l Marine water	Fish - Fish	6.82 Mg/l
	Acute LC50 > 1,000 mg/l Fresh water	Fish - Fish	
	Acute LC50 > 1,000,000 µg/l Marine water	Fish - Fish	
	Acute LC50 13 mg/l Fresh water	Aquatic invertebrates. Daphnia	
	Acute LC50 6.5 mg/l Fresh water	Aquatic invertebrates. Daphnia	
	Acute LC50 3 mg/l Fresh water	Aquatic invertebrates. Crustaceans	
	Acute LC50 15.9 mg/l Fresh water	Aquatic invertebrates. Crustaceans	
	Acute LC50 3.6 mg/l Fresh water	Aquatic invertebrates. Crustaceans	
	Acute LC50 11 mg/l Fresh water	Aquatic invertebrates. Crustaceans	
	Acute LC50 13.4 mg/l Fresh water	Aquatic invertebrates. Crustaceans	
	Acute EC50 27.8 mg/l Fresh water	Aquatic invertebrates. Daphnia	
	Acute EC50 19.3 mg/l Fresh water	Aquatic invertebrates. Daphnia	
	Acute EC50 35.306 mg/l Fresh water	Aquatic invertebrates. Daphnia	
Remarks - Acute - Aquatic invertebrates.:	Chemicals are not readily available as they are bound within the polymer matrix.		

Conclusion/Summary:

Chemicals are not readily available as they are bound within the polymer matrix.

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 12. Ecological Information (continued)

Persistence and degradability

Conclusion/Summary: Chemicals are not readily available as they are bound within the polymer matrix.

Conclusion/Summary: Chemicals are not readily available as they are bound within the polymer matrix.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Titanium dioxide		-	low

Mobility in soil

Soil/water partition coefficient (KOC): Not available.

Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposable Considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA

Acute hazardous waste "P" List: Not listed

United States - RCRA

Toxic hazardous waste "U" List: Not listed

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 14. Transport Information

- U.S. DOT Classification:** Not regulated for transportation.
- ICAO/IATA:** Not classified as dangerous good under transport regulations.
- IMO/IMDG (maritime):** Not classified as dangerous good under transport regulations.

Section 15. Regulatory Information

U.S. Federal regulations: United States - TSCA 12(b) - Chemical export notification: None of the components are listed.
United States - TSCA 4(a) - Final Test Rules: Not listed
United States - TSCA 4(a) - ITC Priority list: Not listed United States - TSCA 4(a) - Proposed test rules: Not listed United States - TSCA 4(f) - Priority risk review: Not listed
United States - TSCA 5(a)2 - Final significant new use rules: Not listed
United States - TSCA 5(a)2 - Proposed significant new use rules: Not listed
United States - TSCA 5(e) - Substances consent order: Not listed United States - TSCA 6 - Final risk management: Not listed United States - TSCA 6 - Proposed risk management: Not listed United States - TSCA 8(a) - Chemical risk rules: Not listed United States - TSCA 8(a) - Dioxin/Furane precursor: Not listed
United States - TSCA 8(a) - Chemical Data Reporting (CDR): Not determined
United States - TSCA 8(a) - Preliminary assessment report (PAIR): Listed Poly(dimethylsiloxane)
United States - TSCA 8(c) - Significant adverse reaction (SAR): Not listed
United States - TSCA 8(d) - Health and safety studies: Not listed
United States - EPA Clean water act (CWA) section 307 - Priority pollutants: Listed Vinyl chloride monomer Phenol
United States - EPA Clean water act (CWA) section 311 - Hazardous substances: Listed
United States - EPA Clean air act (CAA) section 112 - Accidental release prevention - Flammable substances: Not listed
United States - EPA Clean air act (CAA) section 112 - Accidental release prevention - Toxic substances: Not listed
United States - Department of commerce - Precursor chemical: Not listed

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 15. Regulatory Information (continued)

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs): Not listed
 Clean Air Act Section 602 Class I Substances: Not listed
 Clean Air Act Section 602 Class II Substances: Not listed

DEA List I Chemicals (Precursor Chemicals): Not listed
 DEA List II Chemicals (Essential Chemicals): Not listed

US. EPA CERCLA Hazardous Substances (40 CFR 302): not applicable

SARA 311/312
 Classification: Not applicable.

Composition/information on ingredients

Name	%	Classification
Titanium dioxide	10 - 25	CH

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Aluminum oxide	1344-28-1	1 - 3
Supplier notification	Aluminum oxide	1344-28-1	1 - 3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts: None of the components are listed.
 New York: None of the components are listed.
 New Jersey: The following components are listed:
 Titanium dioxide
 Aluminum oxide
 Ethene, chloro-, homopolymer
 Pennsylvania: The following components are listed:
 Aluminum oxide
 Titanium dioxide

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 15. Regulatory Information (continued)

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

United States inventory (TSCA 8b): All components are listed or exempted.
Canada inventory: All components are listed or exempted.

International regulations

International lists:

- Australia inventory (AICS): Not determined.
- Taiwan Chemical Substances Inventory (TCSI): Not determined.
- Malaysia Inventory (EHS Register): Not determined.
- EINECS: All components are listed or exempted.
- Japan inventory: All components are listed or exempted.
- China inventory (IECSC): All components are listed or exempted.
- Korea inventory: Not determined.
- New Zealand Inventory of Chemicals (NZIoC): Not determined.
- Philippines inventory (PICCS): Not determined.

**Chemical Weapons Convention
List Schedule I Chemicals:** Not listed
**Chemical Weapons Convention
List Schedule II Chemicals:** Not listed
**Chemical Weapons Convention
List Schedule III Chemicals:** Not listed

Safety Data Sheet

White Ink Series



SDS Revision Date: March 2, 2017

Section 16. Other Information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

Multi-Tech believes to the best of its knowledge that the information provided herein, is factual and the recommendations made are accurate as of the date shown. However, no representation or warranty is made as to their completeness or accuracy.

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