

SAFETY DATA SHEET

Date of last issue: 2020-07-01 Date of first issue: 2016-04-25

SECTION 1. IDENTIFICATION

Product name : Textile Pigment Ink Black

TP11-BK1000U

Manufacturer or supplier's details

Company name of supplier : MUTOH America Inc

Address : 4405 East Baseline Road, Suite 120 Phoenix, Arizona 85042

Telephone : 480-968-7772

Emergency telephone : 480-968-7772

During normal opening times

Recommended use of the chemical and restrictions on use

Recommended use : Industrial use

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Glycerine	56-81-5	5 - 10
Carbon black	1333-86-4	1 - 10
Triethanolamine	102-71-6	0.1 - 1

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice

immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of

water.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.



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In case of eye contact : Flush eyes with water as a precaution.

Get medical attention if irritation develops and persists.

If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

Most important symptoms and :

effects, both acute and delayed

None known.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and

use the recommended personal protective equipment when the

potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

Specific hazards during fire

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion

products

Carbon oxides

Nitrogen oxides (NOx)

Specific extinguishing methods: Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment :

for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Use personal protective equipment.

Follow safe handling advice and personal protective equipment

recommendations.

Environmental precautions : Discharge into the environment must be avoided.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages cannot

be contained.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.



Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which

regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/

PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Avoid inhalation of vapor or mist.

Do not swallow.

Avoid contact with eyes.

Avoid prolonged or repeated contact with skin.

Handle in accordance with good industrial hygiene and safety

practice.

Take care to prevent spills, waste and minimize release to the

environment.

Conditions for safe storage : Keep in properly labeled containers.

Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of	Control parameters /	Basis
		exposure)	Permissible concentration	
Glycerine	56-81-5	TWA (mist, respirable	5 mg/m ³	OSHA Z-1
		fraction)		
		TWA (mist, total dust)	15 mg/m³	OSHA Z-1
Carbon black	1333-86-4	TWA	3.5 mg/m ³	NIOSH REL
		TWA	3.5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	3 mg/m³	ACGIH
Triethanolamine	102-71-6	TWA	5 mg/m³	ACGIH

Engineering measures : Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

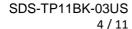
Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to

maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material : Chemical-resistant gloves



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Remarks : Choose gloves to protect hands against chemicals depending on

the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special

applications, we recommend clarifying the resistance to

chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of

workday.

Eye protection : Wear the following personal protective equipment:

Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : black

Odor : slight

Odor Threshold : No data available

pH : 7 - 10

Melting point/freezing point : No data available

Initial boiling point and boiling:

range

> 100 °C

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1.05 - 1.15 g/cm³

Solubility(ies)

Water solubility : dispersible

Partition coefficient:

n-octanol/water

: Not applicable

Autoignition temperature : No data available



Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : < 15 mPa.s (25 °C)

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Surface tension : 25 - 35 mN/m, 25 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous

reactions

Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition

products

No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Ingredients: Glycerine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Carbon black:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0046 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Triethanolamine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0036 mg/l

Exposure time: 4 h
Test atmosphere: vapor

Assessment: The substance or mixture has no acute inhalation

toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity



Skin corrosion/irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No skin irritation

Carbon black: Species: Rabbit

Result: No skin irritation

Triethanolamine:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No eye irritation

Carbon black:

Species: Rabbit

Result: No eye irritation

Triethanolamine:

Species: Rabbit

Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients:

Carbon black:

Test Type: Buehler Test

Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Triethanolamine:

Test Type: Maximization Test Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients: Glycerine:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Carbon black:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative



Triethanolamine:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients:
Glycerine:
Species: Rat

Application Route: Ingestion Exposure time: 2 Years

Result: negative

Triethanolamine:

Species: Rat

Application Route: Skin contact Exposure time: 103 weeks

Result: negative

IARC Group 2B: Possibly carcinogenic to humans

Carbon black 1333-86-4

OSHANo ingredient of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential

carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Carbon black is classified by International Agency for Research on Cancer (IARC) as a Group 2B

carcinogen (possibly carcinogenic to humans).

However, IARC considers that carbon black contained in a bound form in printing ink is not

released to air.

Reproductive toxicity

Not classified based on available information.

Ingredients: Glycerine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rabbit

Application Route: Ingestion

Result: negative

Triethanolamine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

STOT-single exposure



Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Ingredients: Carbon black:

Routes of exposure: inhalation (dust/mist/fume)

Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or

Repeated dose toxicity

Ingredients: Glycerine: Species: Rat

NOAEL: 167 mg/m³ LOAEL: 660 mg/m³

Application Route: inhalation (dust/mist/fume)

Exposure time: 13 Weeks Symptoms: Local irritation

Carbon black: Species: Rat NOAEL: 1 mg/kg

LOAEL: 7 mg/kg

Application Route: inhalation (dust/mist/fume)

Exposure time: 90 Days

Triethanolamine:

Species: Rat

NOAEL: 1.000 ma/ka Application Route: Ingestion Exposure time: 90 Days

Species: Rat NOAEL: 0.5 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 28 Days

Method: OECD Test Guideline 412

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Ingredients: Glycerine:

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 1,955 mg/l

Exposure time: 48 h

Toxicity to bacteria NOEC (Pseudomonas putida): > 10,000 mg/l

Exposure time: 16 h

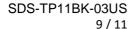
Carbon black:

Toxicity to fish : LC0 (Danio rerio (zebra fish)): 1,000 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 5,600 mg/l



Exposure time: 24 h aquatic invertebrates

Method: OECD Test Guideline 202

NOEC (Desmodesmus subspicatus (green algae)): 10,000 mg/l Toxicity to algae

Exposure time: 72 h

Method: OECD Test Guideline 201

Triethanolamine:

Toxicity to fish LC50 (Pimephales promelas (fathead minnow)): 11,800 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Ceriodaphnia dubia (water flea)): 609.88 mg/l

Exposure time: 48 h

EC50 (Desmodesmus subspicatus (green algae)): 512 mg/l Toxicity to algae

Exposure time: 72 h

Toxicity to daphnia and other : aquatic invertebrates (Chronic

toxicity)

NOEC (Daphnia magna (Water flea)): 16 mg/l

Exposure time: 21 d

Toxicity to bacteria : EC50: > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Persistence and degradability

Ingredients: Glycerine:

Biodegradability Result: Readily biodegradable.

> Biodegradation: 94 % Exposure time: 1 d

Triethanolamine:

Biodegradability Result: Readily biodegradable.

Biodegradation: 100 % Exposure time: 5 d

Bioaccumulative potential

Ingredients: Glycerine:

Partition coefficient:

log Pow: -1.76

n-octanol/water

Triethanolamine:

Bioaccumulation Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): < 0.4

Partition coefficient:

n-octanol/water

log Pow: -1.9

Mobility in soil No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste



handling site for recycling or disposal.

If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

Not regulated as dangerous goods

IATA-DGR

Not regulated as dangerous goods

IMDG-Code

Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting

requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations Pennsylvania Right To Know

 Water
 7732-18-5

 Glycerine
 56-81-5

 Carbon black
 1333-86-4

 Triethanolamine
 102-71-6

California Prop. 65



WARNING: This product can expose you to chemicals including Carbon black, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Permissible Exposure Limits for Chemical Contaminants

Glycerine 56-81-5
Carbon black 1333-86-4
Triethanolamine 102-71-6

SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits



for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour

workday during a 40-hour workweek

OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials: bw - Body weight: CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -Standard of the German Institute for Standardisation: DOT - Department of Transportation: DSL -Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS -Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA -International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified: NFPA - National Fire Protection Association: NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate: NTP - National Toxicology Program: NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention: PBT - Persistent. Bioaccumulative and Toxic substance: PICCS - Philippines Inventory of Chemicals and Chemical Substances: (Q)SAR -(Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ -Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB -Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety

Data Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency,

http://echa.europa.eu/

Revision Date : 2020-07-01

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.



SAFETY DATA SHEET

Date of last issue: 2020-07-01 Date of first issue: 2016-04-25

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Product name : Textile Pigment Ink Blue

TP11-BL1000U

Manufacturer or supplier's details

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Address : 4405 East Baseline Road, Suite 120 Phoenix, Arizona 85042

Telephone : 480-968-7772

Emergency telephone : 480-968-7772

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Recommended use of the chemical and restrictions on use

Recommended use : Industrial use

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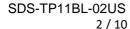
water.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

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Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

Most important symptoms and :

effects, both acute and delayed

None known.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and

use the recommended personal protective equipment when the

potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

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Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

Specific hazards during fire

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion

products

Carbon oxides

Nitrogen oxides (NOx)

Specific extinguishing methods: Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment :

for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

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recommendations.

Environmental precautions : Discharge into the environment must be avoided.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages cannot

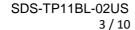
be contained.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.

Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal





of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which

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Take care to prevent spills, waste and minimize release to the

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Store in accordance with the particular national regulations.

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Strong oxidizing agents

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Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of	Control parameters /	Basis
		exposure)	Permissible concentration	
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		TWA (mist, total dust)	15 mg/m³	OSHA Z-1
Triethanolamine	102-71-6	TWA	5 mg/m ³	ACGIH

Engineering measures Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection General and local exhaust ventilation is recommended to

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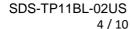
Hand protection

Material : Chemical-resistant gloves

Remarks Choose gloves to protect hands against chemicals depending on

> the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special

applications, we recommend clarifying the resistance to





chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of

workday.

Eye protection : Wear the following personal protective equipment:

Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : blue

Odor : slight

Odor Threshold : No data available

pH : 7 - 10

Melting point/freezing point : No data available

Initial boiling point and boiling:

range

> 100 °C

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1.05 - 1.15 g/cm³

Solubility(ies)

Water solubility : dispersible

Partition coefficient:

n-octanol/water

: Not applicable

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity



Viscosity, dynamic : < 15 mPa.s (25 °C)

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Surface tension : 25 - 35 mN/m, 25 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous

reactions

: Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition

products

: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Ingredients: Glycerine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Triethanolamine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0036 mg/l

Exposure time: 4 h
Test atmosphere: vapor

Assessment: The substance or mixture has no acute inhalation

toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Skin corrosion/irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No skin irritation

Triethanolamine:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation



Serious eye damage/eye irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No eye irritation

Triethanolamine: Species: Rabbit Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients: Triethanolamine:

Test Type: Maximization Test Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients: Glycerine:

Genotoxicity in vitro Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Triethanolamine:

Genotoxicity in vitro Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients: Glycerine: Species: Rat

Application Route: Ingestion Exposure time: 2 Years Result: negative

Triethanolamine:

Species: Rat

Application Route: Skin contact Exposure time: 103 weeks

Result: negative

OSHA No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential

carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:





Glycerine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rabbit

Application Route: Ingestion

Result: negative

Triethanolamine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients: Glycerine: Species: Rat

NOAEL: 167 mg/m³ LOAEL: 660 mg/m³

Application Route: inhalation (dust/mist/fume)

Exposure time: 13 Weeks Symptoms: Local irritation

Triethanolamine:

Species: Rat

NOAEL: 1,000 mg/kg Application Route: Ingestion Exposure time: 90 Days

Species: Rat NOAEL: 0.5 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 28 Days

Method: OECD Test Guideline 412

Aspiration toxicity

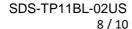
Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Ingredients: Glycerine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l

Exposure time: 96 h



MUTOH

aquatic invertebrates

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1,955 mg/l

Exposure time: 48 h

: NOEC (Pseudomonas putida): > 10,000 mg/l Toxicity to bacteria

Exposure time: 16 h

Triethanolamine:

LC50 (Pimephales promelas (fathead minnow)): 11,800 mg/l Toxicity to fish

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Ceriodaphnia dubia (water flea)): 609.88 mg/l

Exposure time: 48 h

: EC50 (Desmodesmus subspicatus (green algae)): 512 mg/l Toxicity to algae

Exposure time: 72 h

Toxicity to daphnia and other : aquatic invertebrates (Chronic

toxicity)

NOEC (Daphnia magna (Water flea)): 16 mg/l

Exposure time: 21 d

Toxicity to bacteria EC50: > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Persistence and degradability

Ingredients: Glycerine:

Biodegradability Result: Readily biodegradable.

> Biodegradation: 94 % Exposure time: 1 d

Triethanolamine:

Result: Readily biodegradable. Biodegradability

> Biodegradation: 100 % Exposure time: 5 d

Bioaccumulative potential

Ingredients: Glycerine:

Partition coefficient:

n-octanol/water

log Pow: -1.76

Triethanolamine:

Bioaccumulation Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): < 0.4

Partition coefficient:

n-octanol/water

log Pow: -1.9

Mobility in soil No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste

handling site for recycling or disposal.



If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

Not regulated as dangerous goods

IATA-DGR

Not regulated as dangerous goods

IMDG-Code

Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting

requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

 Water
 7732-18-5

 Glycerine
 56-81-5

 Triethanolamine
 102-71-6

California Permissible Exposure Limits for Chemical Contaminants

Glycerine 56-81-5 Triethanolamine 102-71-6

SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits

for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour

workday during a 40-hour workweek

OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of



Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL -Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS -Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System: IARC - International Agency for Research on Cancer: IATA -International Air Transport Association: IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified: NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR -(Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ -Reportable Quantity: SADT - Self-Accelerating Decomposition Temperature: SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory: TSCA - Toxic Substances Control Act (United States): UN - United Nations: UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods: vPvB -Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety

Data Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency,

http://echa.europa.eu/

Revision Date : 2020-07-01

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.



SAFETY DATA SHEET

Date of last issue: 2020-07-01 Date of first issue: 2016-04-25

SECTION 1. IDENTIFICATION

Product name : Textile Pigment Ink Cyan

TP11-CY1000U

Manufacturer or supplier's details

Company name of supplier : MUTOH America Inc

Address : 4405 East Baseline Road, Suite 120 Phoenix, Arizona 85042

Telephone : 480-968-7772

Emergency telephone : 480-968-7772

During normal opening times

Recommended use of the chemical and restrictions on use

Recommended use : Industrial use

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Glycerine	56-81-5	10 - 20
Triethanolamine	102-71-6	0.1 - 1

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice

immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of

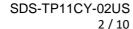
water.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact : Flush eyes with water as a precaution.





Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

Most important symptoms and :

effects, both acute and delayed

None known.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and

use the recommended personal protective equipment when the

potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

Specific hazards during fire

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion

products

Carbon oxides

Nitrogen oxides (NOx)

Specific extinguishing methods: Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment :

for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Use personal protective equipment.

Follow safe handling advice and personal protective equipment

recommendations.

Environmental precautions : Discharge into the environment must be avoided.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages cannot

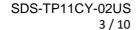
be contained.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.

Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal





of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which

regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures See Engineering measures under EXPOSURE CONTROLS/

PERSONAL PROTECTION section.

Local/Total ventilation Use only with adequate ventilation.

Advice on safe handling Avoid inhalation of vapor or mist.

Do not swallow.

Avoid contact with eyes.

Avoid prolonged or repeated contact with skin.

Handle in accordance with good industrial hygiene and safety

practice.

Take care to prevent spills, waste and minimize release to the

environment.

Conditions for safe storage Keep in properly labeled containers.

Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of	Control parameters /	Basis
		exposure)	Permissible concentration	
Glycerine	56-81-5	TWA (mist, respirable fraction)	5 mg/m³	OSHA Z-1
		TWA (mist, total dust)	15 mg/m³	OSHA Z-1
Triethanolamine	102-71-6	TWA	5 mg/m ³	ACGIH

Engineering measures Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection General and local exhaust ventilation is recommended to

maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying

respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

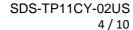
Hand protection

Material : Chemical-resistant gloves

Remarks Choose gloves to protect hands against chemicals depending on

the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special

applications, we recommend clarifying the resistance to





chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of

workday.

Eye protection : Wear the following personal protective equipment:

Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : cyan

Odor : slight

Odor Threshold : No data available

pH : 7 - 10

Melting point/freezing point : No data available

Initial boiling point and boiling:

range

> 100 °C

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1.05 - 1.15 g/cm³

Solubility(ies)

Water solubility : dispersible

Partition coefficient:

n-octanol/water

Not applicable

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity



Viscosity, dynamic : < 15 mPa.s (25 °C)

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Surface tension : 25 - 35 mN/m, 25 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous

reactions

: Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition

products

: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Ingredients: Glycerine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Triethanolamine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0036 mg/l

Exposure time: 4 h
Test atmosphere: vapor

Assessment: The substance or mixture has no acute inhalation

toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Skin corrosion/irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No skin irritation

Triethanolamine:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation



Serious eye damage/eye irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No eye irritation

Triethanolamine: Species: Rabbit Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients: Triethanolamine:

Test Type: Maximization Test Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients: Glycerine:

Genotoxicity in vitro Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Triethanolamine:

Genotoxicity in vitro Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients: Glycerine: Species: Rat

Application Route: Ingestion Exposure time: 2 Years Result: negative

Triethanolamine:

Species: Rat

Application Route: Skin contact Exposure time: 103 weeks

Result: negative

OSHA No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential

carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:



Glycerine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rabbit

Application Route: Ingestion

Result: negative

Triethanolamine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients: Glycerine: Species: Rat

NOAEL: 167 mg/m³ LOAEL: 660 mg/m³

Application Route: inhalation (dust/mist/fume)

Exposure time: 13 Weeks Symptoms: Local irritation

Triethanolamine:

Species: Rat

NOAEL: 1,000 mg/kg Application Route: Ingestion Exposure time: 90 Days

Species: Rat NOAEL: 0.5 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 28 Days

Method: OECD Test Guideline 412

Aspiration toxicity

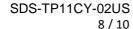
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Exposure time: 96 h





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Method: OECD Test Guideline 209

Persistence and degradability

Ingredients: Glycerine:

Biodegradability Result: Readily biodegradable.

> Biodegradation: 94 % Exposure time: 1 d

Triethanolamine:

Result: Readily biodegradable. Biodegradability

> Biodegradation: 100 % Exposure time: 5 d

Bioaccumulative potential

Ingredients: Glycerine:

Partition coefficient:

n-octanol/water

log Pow: -1.76

Triethanolamine:

Bioaccumulation Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): < 0.4

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log Pow: -1.9

Mobility in soil No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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Contaminated packaging Empty containers should be taken to an approved waste

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If not otherwise specified: Dispose of as unused product.

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Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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SARA 304 Extremely Hazardous Substances Reportable Quantity

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SARA 311/312 Hazards : No SARA Hazards

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Glycerine 56-81-5 Triethanolamine 102-71-6

SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

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ACGIH / TWA : 8-hour, time-weighted average

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OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of



Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL -Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS -Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System: IARC - International Agency for Research on Cancer: IATA -International Air Transport Association: IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified: NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR -(Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ -Reportable Quantity: SADT - Self-Accelerating Decomposition Temperature: SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory: TSCA - Toxic Substances Control Act (United States): UN - United Nations: UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods: vPvB -Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety

Data Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency,

http://echa.europa.eu/

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SAFETY DATA SHEET

Date of last issue: 2020-07-01 Date of first issue: 2016-04-25

SECTION 1. IDENTIFICATION

Product name : Textile Pigment Ink Green

TP11-GR1000U

Manufacturer or supplier's details

Company name of supplier : MUTOH America Inc

Address : 4405 East Baseline Road, Suite 120 Phoenix, Arizona 85042

Telephone : 480-968-7772

Emergency telephone : 480-968-7772

During normal opening times

Recommended use of the chemical and restrictions on use

Recommended use : Industrial use

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Glycerine	56-81-5	10 - 20
Triethanolamine	102-71-6	0.1 - 1

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice

immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of

water.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact : Flush eyes with water as a precaution.



2 / 10

MUTOH

Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

Most important symptoms and : effects, both acute and delayed

None known.

Protection of first-aiders

First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the

potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

Specific hazards during fire

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion

products

Carbon oxides

Nitrogen oxides (NOx)

Specific extinguishing methods: Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment :

for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Use personal protective equipment.

Follow safe handling advice and personal protective equipment

recommendations.

Environmental precautions : Discharge into the environment must be avoided.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages cannot

be contained.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal





of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which

regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures See Engineering measures under EXPOSURE CONTROLS/

PERSONAL PROTECTION section.

Local/Total ventilation Use only with adequate ventilation.

Advice on safe handling Avoid inhalation of vapor or mist.

Do not swallow.

Avoid contact with eyes.

Avoid prolonged or repeated contact with skin.

Handle in accordance with good industrial hygiene and safety

practice.

Take care to prevent spills, waste and minimize release to the

environment.

Conditions for safe storage Keep in properly labeled containers.

Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of	Control parameters /	Basis
		exposure)	Permissible concentration	
Glycerine	56-81-5	TWA (mist, respirable fraction)	5 mg/m³	OSHA Z-1
		TWA (mist, total dust)	15 mg/m³	OSHA Z-1
Triethanolamine	102-71-6	TWA	5 mg/m ³	ACGIH

Engineering measures Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection General and local exhaust ventilation is recommended to

maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying

respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material : Chemical-resistant gloves

Remarks Choose gloves to protect hands against chemicals depending on

the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special

applications, we recommend clarifying the resistance to





chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of

workday.

Eye protection : Wear the following personal protective equipment:

Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : green

Odor : slight

Odor Threshold : No data available

pH : 7 - 10

Melting point/freezing point : No data available

Initial boiling point and boiling:

range

> 100 °C

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1.05 - 1.15 g/cm³

Solubility(ies)

Water solubility : dispersible

Partition coefficient:

n-octanol/water

Not applicable

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity



Viscosity, dynamic : < 15 mPa.s (25 °C)

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Surface tension : 25 - 35 mN/m, 25 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous

reactions

: Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition

products

: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Ingredients: Glycerine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Triethanolamine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0036 mg/l

Exposure time: 4 h
Test atmosphere: vapor

Assessment: The substance or mixture has no acute inhalation

toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Skin corrosion/irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No skin irritation

Triethanolamine:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation



Serious eye damage/eye irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No eye irritation

Triethanolamine:Species: Rabbit Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients: Triethanolamine:

Test Type: Maximization Test Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients: Glycerine:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Triethanolamine:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients: Glycerine: Species: Rat

Application Route: Ingestion

Exposure time: 2 Years
Result: negative

Triethanolamine:

Species: Rat

Application Route: Skin contact Exposure time: 103 weeks

Result: negative

OSHANo ingredient of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential

carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:



Glycerine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rabbit

Application Route: Ingestion

Result: negative

Triethanolamine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients: Glycerine: Species: Rat

NOAEL: 167 mg/m³ LOAEL: 660 mg/m³

Application Route: inhalation (dust/mist/fume)

Exposure time: 13 Weeks Symptoms: Local irritation

Triethanolamine:

Species: Rat

NOAEL: 1,000 mg/kg Application Route: Ingestion Exposure time: 90 Days

Species: Rat NOAEL: 0.5 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 28 Days

Method: OECD Test Guideline 412

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Ingredients: Glycerine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l

Exposure time: 96 h

MUTOH

aquatic invertebrates

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1,955 mg/l

Exposure time: 48 h

: NOEC (Pseudomonas putida): > 10,000 mg/l Toxicity to bacteria

Exposure time: 16 h

Triethanolamine:

LC50 (Pimephales promelas (fathead minnow)): 11,800 mg/l Toxicity to fish

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Ceriodaphnia dubia (water flea)): 609.88 mg/l

Exposure time: 48 h

: EC50 (Desmodesmus subspicatus (green algae)): 512 mg/l Toxicity to algae

Exposure time: 72 h

Toxicity to daphnia and other : aquatic invertebrates (Chronic

toxicity)

NOEC (Daphnia magna (Water flea)): 16 mg/l

Exposure time: 21 d

Toxicity to bacteria EC50: > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Persistence and degradability

Ingredients: Glycerine:

Biodegradability Result: Readily biodegradable.

Biodegradation: 94 % Exposure time: 1 d

Triethanolamine:

Result: Readily biodegradable. Biodegradability

> Biodegradation: 100 % Exposure time: 5 d

Bioaccumulative potential

Ingredients: Glycerine:

Partition coefficient:

n-octanol/water

log Pow: -1.76

Triethanolamine:

Bioaccumulation Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): < 0.4

Partition coefficient:

n-octanol/water

log Pow: -1.9

Mobility in soil No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste

handling site for recycling or disposal.



If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

Not regulated as dangerous goods

IATA-DGR

Not regulated as dangerous goods

IMDG-Code

Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting

requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

 Water
 7732-18-5

 Glycerine
 56-81-5

 Triethanolamine
 102-71-6

California Permissible Exposure Limits for Chemical Contaminants

Glycerine 56-81-5 Triethanolamine 102-71-6

SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits

for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour

workday during a 40-hour workweek

OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of



Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL -Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS -Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System: IARC - International Agency for Research on Cancer: IATA -International Air Transport Association: IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified: NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR -(Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ -Reportable Quantity: SADT - Self-Accelerating Decomposition Temperature: SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory: TSCA - Toxic Substances Control Act (United States): UN - United Nations: UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods: vPvB -Very Persistent and Very Bioaccumulative

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SAFETY DATA SHEET

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TP11-MA1000U

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Address : 4405 East Baseline Road, Suite 120 Phoenix, Arizona 85042

Telephone : 480-968-7772

Emergency telephone : 480-968-7772

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Recommended use of the chemical and restrictions on use

Recommended use : Industrial use

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GHS label elements

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Other hazards

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Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
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When symptoms persist or in all cases of doubt seek medical

advice.

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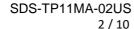
water.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact : Flush eyes with water as a precaution.





Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

Most important symptoms and : effects, both acute and delayed

None known.

Protection of first-aiders

First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the

potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

Specific hazards during fire

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion

products

Carbon oxides

Nitrogen oxides (NOx)

Specific extinguishing methods: Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment :

for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

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Follow safe handling advice and personal protective equipment

recommendations.

Environmental precautions : Discharge into the environment must be avoided.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages cannot

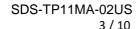
be contained.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be

pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal





of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which

regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/

PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Avoid inhalation of vapor or mist.

Do not swallow.

Avoid contact with eyes.

Avoid prolonged or repeated contact with skin.

Handle in accordance with good industrial hygiene and safety

practice.

Take care to prevent spills, waste and minimize release to the

environment.

Conditions for safe storage : Keep in properly labeled containers.

Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of	Control parameters /	Basis
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		TWA (mist, total dust)	15 mg/m³	OSHA Z-1
Triethanolamine	102-71-6	TWA	5 mg/m ³	ACGIH

Engineering measures : Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to

maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are

respirators may not provide adequate protection.

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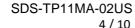
Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on

the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special

applications, we recommend clarifying the resistance to





chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of

workday.

Eye protection : Wear the following personal protective equipment:

Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : magenta

Odor : slight

Odor Threshold : No data available

pH : 7 - 10

Melting point/freezing point : No data available

Initial boiling point and boiling:

range

> 100 °C

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1.05 - 1.15 g/cm³

Solubility(ies)

Water solubility : dispersible

Partition coefficient:

n-octanol/water

: Not applicable

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity



Viscosity, dynamic : < 15 mPa.s (25 °C)

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Surface tension : 25 - 35 mN/m, 25 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous

reactions

: Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition

products

: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Ingredients: Glycerine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Triethanolamine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0036 mg/l

Exposure time: 4 h
Test atmosphere: vapor

Assessment: The substance or mixture has no acute inhalation

toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Skin corrosion/irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No skin irritation

Triethanolamine:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation



Serious eye damage/eye irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No eye irritation

Triethanolamine: Species: Rabbit

Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients: Triethanolamine:

Test Type: Maximization Test Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients: Glycerine:

Genotoxicity in vitro Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Triethanolamine:

Genotoxicity in vitro Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients: Glycerine: Species: Rat

Application Route: Ingestion Exposure time: 2 Years Result: negative

Triethanolamine:

Species: Rat

Application Route: Skin contact Exposure time: 103 weeks

Result: negative

OSHA No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential

carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:



Glycerine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rabbit

Application Route: Ingestion

Result: negative

Triethanolamine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients: Glycerine: Species: Rat

NOAEL: 167 mg/m³ LOAEL: 660 mg/m³

Application Route: inhalation (dust/mist/fume)

Exposure time: 13 Weeks Symptoms: Local irritation

Triethanolamine:

Species: Rat

NOAEL: 1,000 mg/kg Application Route: Ingestion Exposure time: 90 Days

Species: Rat NOAEL: 0.5 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 28 Days

Method: OECD Test Guideline 412

Aspiration toxicity

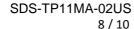
Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Ingredients: Glycerine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l

Exposure time: 96 h



MUTOH

aquatic invertebrates

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1,955 mg/l

Exposure time: 48 h

: NOEC (Pseudomonas putida): > 10,000 mg/l Toxicity to bacteria

Exposure time: 16 h

Triethanolamine:

LC50 (Pimephales promelas (fathead minnow)): 11,800 mg/l Toxicity to fish

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Ceriodaphnia dubia (water flea)): 609.88 mg/l

Exposure time: 48 h

: EC50 (Desmodesmus subspicatus (green algae)): 512 mg/l Toxicity to algae

Exposure time: 72 h

Toxicity to daphnia and other : aquatic invertebrates (Chronic

toxicity)

NOEC (Daphnia magna (Water flea)): 16 mg/l

Exposure time: 21 d

Toxicity to bacteria EC50: > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Persistence and degradability

Ingredients: Glycerine:

Biodegradability Result: Readily biodegradable.

> Biodegradation: 94 % Exposure time: 1 d

Triethanolamine:

Result: Readily biodegradable. Biodegradability

> Biodegradation: 100 % Exposure time: 5 d

Bioaccumulative potential

Ingredients: Glycerine:

Partition coefficient:

n-octanol/water

log Pow: -1.76

Triethanolamine:

Bioaccumulation Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): < 0.4

Partition coefficient:

n-octanol/water

log Pow: -1.9

Mobility in soil No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste

handling site for recycling or disposal.



If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

Not regulated as dangerous goods

IATA-DGR

Not regulated as dangerous goods

IMDG-Code

Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting

requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

 Water
 7732-18-5

 Glycerine
 56-81-5

 Triethanolamine
 102-71-6

California Permissible Exposure Limits for Chemical Contaminants

Glycerine 56-81-5 Triethanolamine 102-71-6

SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits

for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour

workday during a 40-hour workweek

OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of



Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL -Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS -Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System: IARC - International Agency for Research on Cancer: IATA -International Air Transport Association: IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified: NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR -(Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ -Reportable Quantity: SADT - Self-Accelerating Decomposition Temperature: SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory: TSCA - Toxic Substances Control Act (United States): UN - United Nations: UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods: vPvB -Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety

Data Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency,

http://echa.europa.eu/

Revision Date : 2020-07-01

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.



SAFETY DATA SHEET

Date of last issue: 2020-07-01 Date of first issue: 2016-04-25

SECTION 1. IDENTIFICATION

Product name : Textile Pigment Ink Orange

TP11-OR1000U

Manufacturer or supplier's details

Company name of supplier : MUTOH America Inc

Address : 4405 East Baseline Road, Suite 120 Phoenix, Arizona 85042

Telephone : 480-968-7772

Emergency telephone : 480-968-7772

During normal opening times

Recommended use of the chemical and restrictions on use

Recommended use : Industrial use

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Glycerine	56-81-5	10 - 20
Triethanolamine	102-71-6	0.1 - 1

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice

immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of

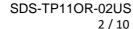
water.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact : Flush eyes with water as a precaution.



MUTOH

Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

Most important symptoms and :

effects, both acute and delayed

None known.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and

use the recommended personal protective equipment when the

potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

Specific hazards during fire

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion

products

Carbon oxides

Nitrogen oxides (NOx)

Specific extinguishing methods: Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment :

for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Use personal protective equipment.

Follow safe handling advice and personal protective equipment

recommendations.

Environmental precautions : Discharge into the environment must be avoided.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

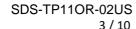
Local authorities should be advised if significant spillages cannot

be contained.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal





of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which

regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/

PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Avoid inhalation of vapor or mist.

Do not swallow.

Avoid contact with eyes.

Avoid prolonged or repeated contact with skin.

Handle in accordance with good industrial hygiene and safety

practice.

Take care to prevent spills, waste and minimize release to the

environment.

Conditions for safe storage : Keep in properly labeled containers.

Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of	Control parameters /	Basis
		exposure)	Permissible concentration	
Glycerine	56-81-5	TWA (mist, respirable fraction)	5 mg/m³	OSHA Z-1
		TWA (mist, total dust)	15 mg/m³	OSHA Z-1
Triethanolamine	102-71-6	TWA	5 mg/m ³	ACGIH

Engineering measures : Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to

maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying

respirators may not provide adequate protection.

Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on

the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special

applications, we recommend clarifying the resistance to





chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of

workday.

Eye protection : Wear the following personal protective equipment:

Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : orange

Odor : slight

Odor Threshold : No data available

pH : 7 - 10

Melting point/freezing point : No data available

Initial boiling point and boiling:

range

> 100 °C

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1.05 - 1.15 g/cm³

Solubility(ies)

Water solubility : dispersible

Partition coefficient:

n-octanol/water

: Not applicable

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity





: < 15 mPa.s (25 °C) Viscosity, dynamic

Explosive properties : Not explosive

Oxidizing properties The substance or mixture is not classified as oxidizing.

Surface tension 25 - 35 mN/m, 25 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability Stable under normal conditions.

Possibility of hazardous

reactions

: Can react with strong oxidizing agents.

Conditions to avoid None known.

Incompatible materials Oxidizing agents

Hazardous decomposition

products

: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Ingredients: Glycerine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Triethanolamine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0036 mg/l

> Exposure time: 4 h Test atmosphere: vapor

Assessment: The substance or mixture has no acute inhalation

toxicity

Acute dermal toxicity LD50 (Rabbit): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Skin corrosion/irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No skin irritation

Triethanolamine:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation



Serious eye damage/eye irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No eye irritation

Triethanolamine: Species: Rabbit Regult: No avairation

Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients: Triethanolamine:

Test Type: Maximization Test Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients: Glycerine:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Triethanolamine:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients: Glycerine: Species: Rat

Application Route: Ingestion

Exposure time: 2 Years
Result: negative

Triethanolamine:

Species: Rat

Application Route: Skin contact Exposure time: 103 weeks

Result: negative

OSHANo ingredient of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential

carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:



Glycerine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rabbit

Application Route: Ingestion

Result: negative

Triethanolamine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients: Glycerine: Species: Rat

NOAEL: 167 mg/m³ LOAEL: 660 mg/m³

Application Route: inhalation (dust/mist/fume)

Exposure time: 13 Weeks Symptoms: Local irritation

Triethanolamine:

Species: Rat

NOAEL: 1,000 mg/kg Application Route: Ingestion Exposure time: 90 Days

Species: Rat NOAEL: 0.5 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 28 Days

Method: OECD Test Guideline 412

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Ingredients: Glycerine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l

Exposure time: 96 h

8 / 10

MUTOH

aquatic invertebrates

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1,955 mg/l

Exposure time: 48 h

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toxicity)

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Exposure time: 21 d

Toxicity to bacteria EC50: > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Persistence and degradability

Ingredients: Glycerine:

Biodegradability Result: Readily biodegradable.

Biodegradation: 94 % Exposure time: 1 d

Triethanolamine:

Result: Readily biodegradable. Biodegradability

> Biodegradation: 100 % Exposure time: 5 d

Bioaccumulative potential

Ingredients: Glycerine:

Partition coefficient:

n-octanol/water

log Pow: -1.76

Triethanolamine:

Bioaccumulation Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): < 0.4

Partition coefficient:

n-octanol/water

log Pow: -1.9

Mobility in soil No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste

handling site for recycling or disposal.



If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

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Not regulated as dangerous goods

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IMDG-Code

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Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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Domestic regulation

49 CFR

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

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 Triethanolamine
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California Permissible Exposure Limits for Chemical Contaminants

Glycerine 56-81-5 Triethanolamine 102-71-6

SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

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for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average

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OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of



Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL -Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS -Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System: IARC - International Agency for Research on Cancer: IATA -International Air Transport Association: IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified: NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR -(Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ -Reportable Quantity: SADT - Self-Accelerating Decomposition Temperature: SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory: TSCA - Toxic Substances Control Act (United States): UN - United Nations: UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods: vPvB -Very Persistent and Very Bioaccumulative

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http://echa.europa.eu/

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SAFETY DATA SHEET

Date of last issue: 2020-07-01 Date of first issue: 2016-04-25

SECTION 1. IDENTIFICATION

Product name : Textile Pigment Ink Yellow

TP11-YE1000U

Manufacturer or supplier's details

Company name of supplier : MUTOH America Inc

Address : 4405 East Baseline Road, Suite 120 Phoenix, Arizona 85042

Telephone : 480-968-7772

Emergency telephone : 480-968-7772

During normal opening times

Recommended use of the chemical and restrictions on use

Recommended use : Industrial use

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Glycerine	56-81-5	5 - 10
Triethanolamine	102-71-6	0.1 - 1

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice

immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of

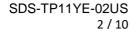
water.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact : Flush eyes with water as a precaution.





Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

Most important symptoms and :

effects, both acute and delayed

None known.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and

use the recommended personal protective equipment when the

potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

Specific hazards during fire

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion

products

Carbon oxides

Nitrogen oxides (NOx)

Specific extinguishing methods: Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment :

for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Use personal protective equipment.

Follow safe handling advice and personal protective equipment

recommendations.

Environmental precautions : Discharge into the environment must be avoided.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages cannot

be contained.

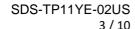
Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.

Clean up remaining materials from spill with suitable absorbent.

Local or national regulations may apply to releases and disposal





of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which

regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures See Engineering measures under EXPOSURE CONTROLS/

PERSONAL PROTECTION section.

Local/Total ventilation Use only with adequate ventilation.

Advice on safe handling Avoid inhalation of vapor or mist.

Do not swallow.

Avoid contact with eyes.

Avoid prolonged or repeated contact with skin.

Handle in accordance with good industrial hygiene and safety

practice.

Take care to prevent spills, waste and minimize release to the

environment.

Conditions for safe storage Keep in properly labeled containers.

Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of	Control parameters /	Basis
		exposure)	Permissible concentration	
Glycerine	56-81-5	TWA (mist, respirable fraction)	5 mg/m³	OSHA Z-1
		TWA (mist, total dust)	15 mg/m³	OSHA Z-1
Triethanolamine	102-71-6	TWA	5 mg/m ³	ACGIH

Engineering measures Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection General and local exhaust ventilation is recommended to

maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying

respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material : Chemical-resistant gloves

Remarks Choose gloves to protect hands against chemicals depending on

the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special

applications, we recommend clarifying the resistance to





chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of

workday.

Eye protection : Wear the following personal protective equipment:

Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : yellow

Odor : slight

Odor Threshold : No data available

pH : 7 - 10

Melting point/freezing point : No data available

Initial boiling point and boiling :

range

> 100 °C

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1.05 - 1.15 g/cm³

Solubility(ies)

Water solubility : dispersible

Partition coefficient:

n-octanol/water

: Not applicable

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity



Viscosity, dynamic : < 15 mPa.s (25 °C)

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Surface tension : 25 - 35 mN/m, 25 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous

reactions

: Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition

products

: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Ingredients: Glycerine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Triethanolamine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0036 mg/l

Exposure time: 4 h
Test atmosphere: vapor

Assessment: The substance or mixture has no acute inhalation

toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Skin corrosion/irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No skin irritation

Triethanolamine:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation



Serious eye damage/eye irritation

Not classified based on available information.

Ingredients: Glycerine:

Result: No eye irritation

Triethanolamine:Species: Rabbit Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients: Triethanolamine:

Test Type: Maximization Test Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients: Glycerine:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Triethanolamine:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients: Glycerine: Species: Rat

Species: Rat

Application Route: Ingestion Exposure time: 2 Years Result: negative

Triethanolamine:

Species: Rat

Application Route: Skin contact Exposure time: 103 weeks

Result: negative

OSHANo ingredient of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential

carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:



Glycerine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development Test Type: Embryo-fetal development

Species: Rabbit

Application Route: Ingestion

Result: negative

Triethanolamine:

Effects on fertility Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on fetal development Test Type: Embryo-fetal development

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients: Glycerine: Species: Rat

NOAEL: 167 mg/m³ LOAEL: 660 mg/m³

Application Route: inhalation (dust/mist/fume)

Exposure time: 13 Weeks Symptoms: Local irritation

Triethanolamine:

Species: Rat

NOAEL: 1,000 mg/kg Application Route: Ingestion Exposure time: 90 Days

Species: Rat NOAEL: 0.5 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 28 Days

Method: OECD Test Guideline 412

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Ingredients: Glycerine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l

Exposure time: 96 h





aquatic invertebrates

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1,955 mg/l

Exposure time: 48 h

: NOEC (Pseudomonas putida): > 10,000 mg/l Toxicity to bacteria

Exposure time: 16 h

Triethanolamine:

LC50 (Pimephales promelas (fathead minnow)): 11,800 mg/l Toxicity to fish

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Ceriodaphnia dubia (water flea)): 609.88 mg/l

Exposure time: 48 h

: EC50 (Desmodesmus subspicatus (green algae)): 512 mg/l Toxicity to algae

Exposure time: 72 h

Toxicity to daphnia and other : aquatic invertebrates (Chronic

toxicity)

NOEC (Daphnia magna (Water flea)): 16 mg/l

Exposure time: 21 d

Toxicity to bacteria EC50: > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Persistence and degradability

Ingredients: Glycerine:

Biodegradability

Result: Readily biodegradable.

Biodegradation: 94 % Exposure time: 1 d

Triethanolamine:

Result: Readily biodegradable. Biodegradability

> Biodegradation: 100 % Exposure time: 5 d

Bioaccumulative potential

Ingredients: Glycerine:

Partition coefficient:

n-octanol/water

log Pow: -1.76

Triethanolamine:

Bioaccumulation Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): < 0.4

Partition coefficient:

n-octanol/water

log Pow: -1.9

Mobility in soil No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste

handling site for recycling or disposal.



If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

Not regulated as dangerous goods

IATA-DGR

Not regulated as dangerous goods

IMDG-Code

Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting

requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

 Water
 7732-18-5

 Glycerine
 56-81-5

 Triethanolamine
 102-71-6

California Permissible Exposure Limits for Chemical Contaminants

Glycerine 56-81-5 Triethanolamine 102-71-6

SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits

for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour

workday during a 40-hour workweek

OSHA Z-1 / TWA : 8-hour time weighted average

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