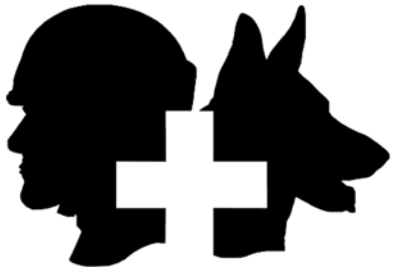
TRAUMA F/X®

Improving Survivability



EMERGENCY MEDICAL TRAUMA TRAINER – ACTIVE SHOOTER UPPER (EMITT-ASU)

Emergency Medical Trauma Trainer – Active Shooter Upper (EMITT-ASU) User Guide

Rev_Q2_2020

TRAUMA F/X®

Improving Survivability

TraumaFX®

Emergency Medical Trauma Trainer – Active Shooter Upper (EMITT-ASU)

TraumaFX Customer Service
MATTsupport@traumafx.net
1-800-200-7465

Rev_Q2_2020

Chapter 1

Chapter 1: Introduction

About the Emergency Medical Trauma Trainer – Active Shooter Upper (EMITT-ASU) Unit

The TraumaFX® Emergency Medical Trauma Trainer – Active Shooter Upper (EMITT-ASU) unit is a ruggedized upper body medical simulator that takes realism to the next level by helping trainees learn how to treat and perform interventions on patients suffering from traumatic upper body and airway injuries. EMITT-ASU is covered in lifelike synthetic skin and includes a simulated rib cage and sternum. Students learn to find realistic anatomic landmarks to execute critical patient treatment without relying on marked indicators. EMITT-ASU helps teach responders to perform life-saving tasks such as maintaining a patient's airway, needle chest decompression, and chest seal placement. EMITT-ASU is designed for rugged use in realistic training environments. To ensure proper operation, do not subject the EMITT-ASU upper body to unnecessarily harsh treatment. Care for EMITT-ASU as you would a live patient. Also, careful preventive maintenance and frequent after-use inspection is essential to ensure the service life of your EMITT-ASU(s). Please review Chapter 5: After Use Care of this user guide, which outlines the standard preventive maintenance required under the terms of the EMITT-ASU limited warranty.

The TraumaFX® EMITT-ASU is unparalleled in ruggedness and durability. EMITT-ASU was designed specifically for use in tough outdoor terrains, and features articulating shoulders, and realistic, reinforced silicone arms. It can be carried, dragged, and transported in a variety of vehicles and aircraft. EMITT-ASU can withstand nearly any weather condition, making it ideally suited for real world simulation training for Tactical Combat Casualty Care (TCCC) and Combat Lifesaver training courses.

EMITT-ASU is a multi-purpose training simulator that can function as a stand-alone skills station or be connected to any TraumaFX® lower unit for use in training lanes. EMITT-ASU's simulated injury and intervention sites allow for multiple uses with cost-effective replacement components available.

Item Checklist

The components listed below are required to set up and operate your EMITT-ASU upper unit and come standard with each TraumaFX® EMITT-ASU purchase. Optional components may or may not be included – check your order or packing lists to determine if any optional components were purchased.

Standard Components

EMITT-ASU Upper Body

Sucking Chest Wound Blood (1 Pint)

Needle D Skin Plug (Left & Right) x 2

Pleural Membrane Covers x 20

8 oz. Airway Lubricant x1

Figure 1

Other standard components not shown

- 12cc Straight Tip Syringe (1)
- ACC-O-rings for the Filter Cap (5pk)
- User Documentation

Optional Components, Features, or Accessories

- Emergency Medical Trauma Trainer – Tactical Medical Lower (EMITT-TML)
- Emergency Medical Trauma Trainer – Active Shooter Lower (EMITT-ASL)
- Multiple Amputation Trauma Trainer (MATT)®
- MATT Ace Lower Body Trainer
- Packable Hemostatic (HEMO) Trauma Trainer
- Clinical Response Lower (CRL)
- Injured Hands

Special Notes and Cautions

Read all TraumaFX instructional manuals before attempting to assemble, install, or operate the Emergency Medical Trauma Trainer - Active Shooter Upper (EMITT-ASU) Upper Body or accessories.

After Use Care

EMITT-ASU is designed for rugged use in realistic training environments. To keep EMITT-ASU working optimally, careful preventive maintenance and frequent after-use inspection will extend the service life of EMITT-ASU and is required under the terms of the limited warranty. Please read Chapter 5: After Use Care detailing the tasks to perform at the end of every training session, such as cleaning EMITT-ASU and replacing skin plugs when needed.

Water Resistance and Cleanup

DO NOT SUBMERGE EMITT-ASU UNDER WATER.

EMITT-ASU is water resistant, but is not waterproof. With water only, carefully wash EMITT-ASU with a soft, wet cloth or sponge after each use. Vigorous scrubbing of the skin can result in permanent damage. If EMITT-ASU is used with any TraumaFX simulated blood products, the simulated blood should be washed out of clothes within 24 hours to avoid staining; pre-treatment of stains and vigorous cleaning will usually remove simulated bloodstains.

System Weight

EMITT-ASU manikins are designed to replicate the weight and feel of a live human patient. Use caution and proper procedures when lifting or carrying the trainer or cases.

Treatment

TREAT EMITT-ASU AS YOU WOULD A HUMAN PATIENT. Though highly ruggedized, do not subject EMITT-ASU to severely damaging conditions; users must treat EMITT-ASU as they would a human patient. Failure to do so can void the EMITT-ASU limited warranty.

Storage

EMITT-ASU body(s) and accessories should be stored in a cool, dry place.

Compliance

If the EMITT-ASU is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Chapter 2

Chapter 2: Emergency Medical Trauma Trainer - Active Shooter Upper Features

This section describes the highly realistic features of EMITT-ASU that contribute to the unique training experience the EMITT-ASU Upper Body provides. EMITT-ASU contains the following features:

- Made of lifelike, wrap-around silicone skin with self-healing intervention sites
- Manually rotatable pinpoint or dilated pupil to cue for Traumatic Brain Injury (TBI), overdose, or nerve agent
- Simulated nasal airways
- Simulated oral airway cavity with teeth and tongue for use with King LT-D or other esophageal airways
- Intubatable head for endotracheal intubation with realistic range of motion at the jaw and neck
- Bilateral needle decompression (3¼" 14 gauge needle) sites with responsive pleural membranes and replaceable skin plugs
- Sucking chest wound with bubbling blood for chest seal placement
- Articulating shoulders that provide full arm rotation
- Reinforced silicone arms that allow natural elbow movement and provide for a soft grip during casualty training scenarios
- Oximeter hands for placement of an oximeter during training
- Gunshot entrance and exit wounds
- Optional interchangeable hands (e.g. Injured Hands)

Ruggedized, Realistic Synthetic Skin

The outer skin of EMITT-ASU is designed to provide the "look-and-feel" of real skin and incorporates simulated injuries for added realism in trauma training. The skin is very rugged, but must be maintained regularly to ensure longevity. EMITT-ASU's simulated skin is made of a proprietary silicone compound and features realistic wounds.

Composition

EMITT-ASU's skin is made of a silicone-based compound that requires cleaning with water. This simulated skin covers the EMITT-ASU trainer. The internal structure of EMITT-ASU's upper body is composed of a heavy-duty anodized aluminum frame that is surrounded by a ruggedized core and layered with realistic silicone-based skin. This construction results in a high-fidelity look and feel with exceptional durability that allows EMITT-ASU to be carried or dragged on many surfaces such as outdoors or flooring commonly found in buildings.

Cautions and Care

EMITT-ASU is water resistant, but not water proof. When washing EMITT-ASU's outer skin, use a soft wet cloth or sponge after each use with water only. Do not use ink or marker on EMITT-ASU for medical notations.

Emergency Medical Trauma Trainer - Active Shooter Upper (EMITT-ASU) Overview

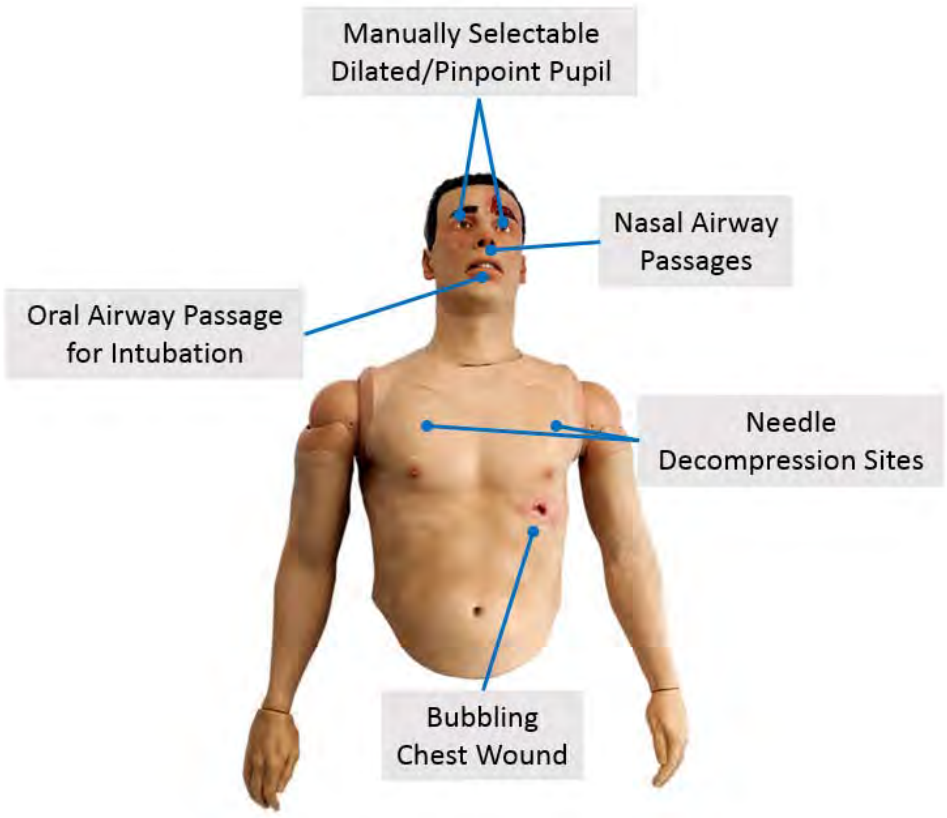


Figure 2

Note - Skin Plugs and Posterior Gunshot Exit Wound Not Shown

Chapter 3

Chapter 3: Getting Started

Read all TraumaFX manuals before attempting to assemble, install, or operate the Emergency Medical Trauma Trainer - Active Shooter Upper (EMITT-ASU) Upper Body or accessories.

Notes on General Use and Care

EMITT-ASU is designed for rugged use in realistic training environments. To ensure proper operation, care for the unit as you would a live patient by not subjecting EMITT-ASU to unnecessarily harsh treatment. Also, careful preventive maintenance and frequent after-use inspection is essential to ensure the service life of the unit(s). Please review Chapter 5: After Use Care, which outlines the after-use care required under the terms of the EMITT-ASU limited warranty.

Attaching an Optional TraumaFX® Lower Unit to EMITT-ASU

A popular option is to use a ruggedized TraumaFX lower body with an EMITT-ASU upper body to help trainees practice how to treat patients suffering from traumatic lower body injuries. These bodies were designed to easily attach together and to quickly enable rapid battery replacement during training exercises.

1. **Fold back** the upper unit chest fascia to expose the quick connect system (Figure 3). Ensure the bracket swings forward from the waist plate.

2. **Bring the Lower and Upper units together** and line up one side of the Upper quick connect with the corresponding Lower unit quick connect (Figure 3).

Figure 3

3. **Insert** the cotter pins into the bracket holes (Figure 4) on both sides of the unit.

4. Pull down chest fascia to cover the space between the upper and lower units.

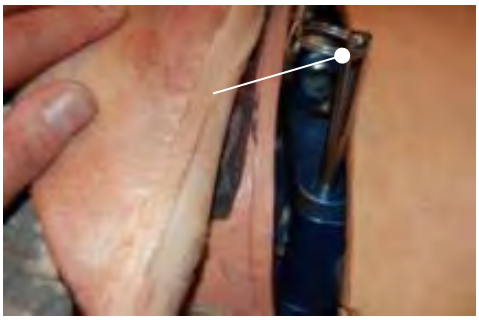


Figure 4

Inserting EMITT-ASU Standard Components and Skin Plugs

Inserting the Pleural Membrane

Insert the pleural membrane so the edges are under the tabs in the pleural membrane recess, and gently depress pleural membrane until it 'snaps' into place, as shown below in (Figure 5).

Figure 5

Inserting the Needle "D" Skin Plugs

Insert the left or right needle "D" skin plug into the matching side recess. Ensure all tabs are securely in place under the skin, and adjust the skin as needed (Figure 6).

Figure 6

Chapter 4

Chapter 4: Operating the Emergency Medical Trauma Trainer - Active Shooter Upper

This chapter describes EMITT-ASU's operational and simulated training features.

Simulated Nasal Airway

The *Simulated Nasal Airway* provides for nasopharyngeal intubation into the nostrils to facilitate opening and maintaining a clear airway (Figure 7).

Figure 7

Simulated Oral Airway

The *Simulated Oral Airway* cavity with teeth and tongue provides for pharyngeal intubation, and facilitates opening and maintaining a clear airway for mechanical ventilation (Figure 8). This simulated airway can be used with King LT-D or other esophageal airways.

The Simulated Oral Airway provides trainees with a flexible neck and jaw to perform endotracheal intubation.

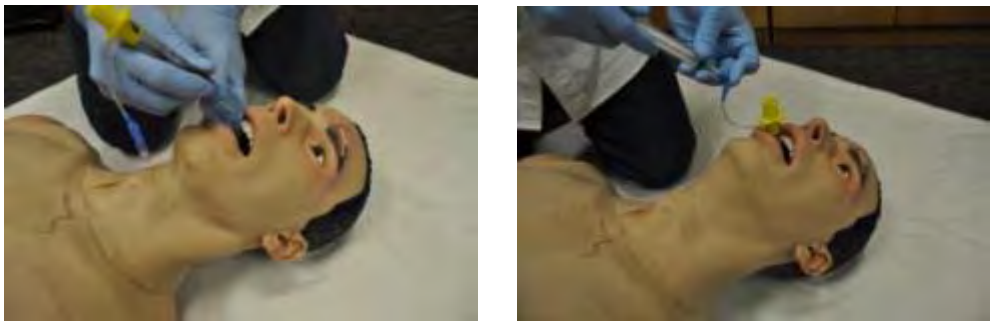


Figure 8

Simulated Needle 'D' (3¼" 14 gauge) Site

The *Simulated Needle 'D' Site* provides trainees with palpable landmarks at the ribs to locate the correct needle decompression site and fully insert the decompression needle (Figure 9) to relieve pneumothorax caused by physical trauma to the chest such as a blast injury. This site uses reusable and replaceable needle 'D' skin plugs to accommodate repeated simulations.

Figure 9

Sucking Chest Wound Site

The Bubbling Chest Wound site is located on the left side of the patient's chest. To operate the feature, fill the 12cc syringe with the Sucking Chest Wound blood, both of which are provided. Place a few drops of blood in the chest wound. To start the bubbling action, depress on the xiphoid process firmly 3 times; this will activate a pump and will provide a steady stream of air through the blood, causing it to bubble.

Chapter 5

Chapter 5: After Use Care

To keep EMITT-ASU operating as designed, the following preventive maintenance actions must be completed after each training session.

These easy to perform maintenance actions will help ensure EMITT-ASU remains in peak operating condition for each training session:

1. Wipe down EMITT-ASU carefully with a soft, wet cloth or sponge after each use with clean water only. Blood stains should be washed out of clothes within 24 hours to avoid staining; pre-treatment of stains and vigorous cleaning will usually remove blood stains.

2. If the skin of EMITT-ASU is cut, then clean the cut with alcohol or with a silicone-approved cleaner that does not leave a residue. Allow the cut to thoroughly dry. Repair the cut using a silicone adhesive such as Sil-Poxy© by Smooth-On which is available for sale from TraumaFX. Allow all repairs to fully cure prior to use.

Water Resistance and Cleanup

DO NOT SUBMERGE EMITT-ASU UNDER WATER.

EMITT-ASU is water resistant, but is not waterproof.

Chapter 6

Chapter 6: Repair & Troubleshooting

How to Repair the EMITT-ASU Skin

The EMITT-ASU skin is very rugged, but is not impervious to accidental damage from cuts or tears from sharp objects or from physical abuse just like human skin is vulnerable. Regular maintenance will ensure its longevity. The EMITT-ASU skin is made of a silicone compound that can be easily repaired using a silicone adhesive, such as "Sil-Poxy", which is specifically made for repairing silicone cuts and tears. Do not use adhesives, such as "Super Glue" as it will damage the skin.

1. Thoroughly clean cut or tear with water followed by rubbing alcohol.
2. Thoroughly dry the skin surface (Figure 10).
3. Generously spread Sil-Poxy inside and over the cut or tear (Figure 11).
4. For a cut, pinch the cut back together.
5. For a tear, replace the skin flap. Apply tape/medical bandage if necessary to hold together until the Sil-Poxy cures.
6. Gently and immediately wipe off excess Sil-Poxy with a tongue depressor, or finger (Figure 12). ***Do not wipe off with a cloth or like material. Do not let excess sit.***
7. Allow the Sil-Poxy to cure at least 8 hours before the skin is used. Once cured, the repaired cut or tear should be difficult to see.

Figure 10

Figure 11

Figure 12

Troubleshooting

Issue	Actions
Skin appears cut or torn	▪ See Chapter 6: How to Repair the EMITT-ASU Skin of this User Guide.
Loose H-Bar at the quick connect waist plate	▪ Periodically check the H-Bar attachment bolts and mounting hardware located at the unit waist plate and tighten as needed with an adjustable wrench.
Skin plugs will not stay in place or appear damaged from multiple simulation use	▪ Replace with a new skin plug. For replacement skin plugs, please contact your account representative 800-200-7465 or customer support at MATTSupport@traumafx.net
Sucking Chest wound does not produce bubbling	▪ Ensure that a few drops of blood have been placed in the wound bed ▪ Press on the xiphoid process 3 times to charge the pump
Receiving less than adequate resistance on needle chest decompression	▪ Replace the pleural membrane. For replacement pleural membranes, please contact your account representative 800-200-7465 or customer support at MATTSupport@traumafx.net

Additional Support

Customer Service and Support

For other troubleshooting issues not identified above, please contact TraumaFX Technical Support at MATTSupport@traumafx.net or 1-800-200-7465

Appendix A – Emergency Medical Trauma Trainer - Active Shooter Upper Technical Specs

Emergency Medical Trauma Trainer - Active Shooter Upper with case

Weight: 69 lbs.
Dimensions (in case): 50x25x15, 115 lbs.
Electrical: None
Indoor or Outdoor Use
Altitude Rating: Altitude up to 2000 m
Temperature Rating: Temperatures between 32°F and 104°F (0°C to 40°C)
Humidity Rating: Maximum relative humidity 80% for temperatures up to 88°F (31°C) decreasing linearly to 50% relative humidity at 104°F (40°C

Appendix B – Safety Data Sheets

- **Airway Lubricant**

Airway Lubricant SDS

SILICONE SOLUTIONS

Safety Data Sheet (SDS)
(Industrial Use Only)

1. Product and Company Identification

Product:
Product Name: SS-50 Silicone Oil
Intended Use: Sealant

Manufacturer/Supplier:
Silicone Solutions
338 Remington Road
Cuyahoga Falls, OH
Preparer: Casey Linx
Chemical Family: Silicone Rubber
Formula: SiO_2CH_3
Emergency Telephone Number: 330-920-3125

2. Hazards Identification

Hazard Classification:
This material's composition is minimally hazardous according to regulatory guidelines. *See Section 15 for hazard ratings.*

Label: None required.

Hazard Statements:
Physical: None known
Health:

Ingestion	None known.
Skin Contact	Manufacturing experience has shown that skin hazard is not applicable in this form.
Inhalation	None known.
Eye Contact	May cause mild eye irritation.
Medical Conditions Aggravated	None known.
Subchronic (target organ) Effects	None known.
Chronic Effects/Carcinogenity	This product or one of its ingredients that is present in 0.1% or more is NOT listed or is suspected as a carcinogen by NTP, IARC, or OSHA.
Principle Routes of Exposure	None known.

Precautionary Statements:
General: Obtain special instructions before use, and do not handle until all safety precautions have been read and understood.

Other Hazard Information:
- This product contains methylpolysiloxanes, which can generate formaldehyde upon exposure above 300 degrees centigrade in atmospheres that contain oxygen. Formaldehyde is a skin, eye, and throat irritant.

3. Composition/Information on Ingredients

Chemical Characterization:
Formula: SiO_2CH_3
Composition and Information on Ingredients: Non-hazardous components unless otherwise specified.

Component	CAS #	Approximate % Weight
Dimethylpolysiloxane	63148-62-9	100

4. First Aid Measures

General Information:
Ingestion: None known.
Skin: Wash with soap and water.
Inhalation: None known.
In case of eye contact: Flush with water for fifteen minutes and get medical attention.

Note to Physician: None known.

5. Firefighting Measures

Flammability Properties:
Flash Point: > 250°C or 482°F
Method: ISO 2592
Ignition Temperature: 395°C or 743°F
Flammable Limits in Air-Upper % : NA
Flammability Limits in Air-Lower % : NA
Sensitivity to Mechanical Impact: No
Sensitivity to Static Discharge: No

Extinguishing Media: All standard firefighting material.

Special Firefighting Procedures: None known.

6. Accidental Release Measures

Action to be taken if material is released or spilled: Scrape up and place in an inert material for disposal. *See Section 8 for protective equipment upon exposure and Section 7 for information on safe handling.*

7. Handling and Storage

Precautions to be taken during handling and storage: None required.

8. Exposure Controls/Personal Protection

Control Parameters:

Components with limit values that require monitoring at the workplace:

Component	CAS #	ACGIH TWA	TLV STEL	OSHA TWA	PEL STEL
Dimethylpolysiloxane	63148-62-9	NE	NE	NF	NE

Exposure Controls and Protection:

Engineering Controls: None known.
Respiratory Protection: None required.
Protective Gloves: None required.
Eye and Face Protection: None required.
Other Protective Equipment: None required.
Ventilation: None required.

9. Physical and Chemical Properties

Information on basic physical and chemical properties:

Boiling Point: NA
Vapor Pressure: NA
Vapor Density: NA
Freezing Point: NA
Melting Point: -55°C (-67°F)
Physical State: Liquid
Odor: Odorless.
% Volatile by Volume: < 1
Evaporation Rate: < 1
Density: 0.96 g/cm³
Acid/Alkalinity: Unknown.
pH: Approximately 7
VOC: NT
Solubility in Water: Insoluble.
Solubility in Organic Solvents: Partially soluble in toluene.

10. Stability and Reactivity

Chemical Stability:

Stability: Stable.

Reactivity:

Hazardous Polymerization: Will not occur.
Hazardous Thermal Decomposition/Combustion Products:

- Carbon Dioxide
- Carbon Monoxide
- Silicon Dioxide
- Formaldehyde

Conditions to Avoid: None known.

11. Toxicological Information

Product Information on Toxicological Effects:

Acute Oral LD50: Unknown.
Acute Dermal LD50: Unknown.
Acute Inhalation LC50: Unknown.
Ames Test: Unknown.

12. Ecological Information

Ecotoxicity:

Ecotoxicological Information: Unknown.
Chemical Fate Information: Unknown.

13. Disposal Considerations

Disposal Method: Disposal should be made in accordance with federal, state, and local considerations.

14. Transport Information

General:

DOT Shipping Name: NA
DOT Hazard Class: Not DOT regulated.
DOT Label: NA
UN/NA Label: NA
Placards: None.
IATA: NA
IMO IMDG-code: NA
European Class:
RID (OCTI): NA
ADR (ECE): NA
RAR (IATA): NA

15. Regulatory Information

Regulatory Status and Applicable Laws and Regulations:

SARA Section 302: None found.
SARA (311, 312) Hazard Class: None.
SARA (313) Chemicals: None.
CPSC Classification: NA
WHMIS Hazard Class: None.
Export Schedule:
B/HTSUS: 3910.00 Silicones in primary form.
ECCN: EAR99
California Proposition 65: None.
TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

Hazard Rating Systems:

HMIS (scale 0-4):

- Health = 0
- Flammability = 0
- Reactivity = 0

NFPA (scale 0-4):

- Health = 0
- Flammability = 0
- Reactivity = 0

16. Other Information

Revision Date: 06/20/2013
SDS Preparer: Casey Linx

This product or its components are on the European inventory (EINECS) of existing commercial chemicals. This data is offered in good faith as typical values and not as a product satisfaction. No warranty, either expressed or implied, is made. The recommended handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific content of the intended use.

Abbreviations and Acronyms:

OSHA: Occupational Safety and Health Administration
ACGIH: American Conference of Governmental Industrial Hygienists
LD50: Lethal Dose, 50 percent
LC50: Lethal Concentration, 50 percent
DOT: US Department of Transportation
IATA: International Air Transport Association
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)

SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name:	Gamsol
Product Description:	Odorless Mineral Spirits (OMS)
Intended Use:	Artists' oil painting solvent. Intended for thinning oil colors, thinning oil painting mediums, grounds and varnishes, and for general brush clean-up.

COMPANY

Company Name:	Gamblin Artists Colors
Company Address:	323 SE Division Pl. Portland, OR 97202 USA
Company Phone:	503-235-1945
Emergency Phone:	Local Emergency Room

SECTION 2: HAZARDS IDENTIFICATION

GHS LABELING

GHS Classification:	Flammable liquid	Category 4
	Aspiration toxicant	Category 1

GHS Pictogram(s):

Signal Word: Danger

HAZARDS

Hazard Statements:

H227	Combustible liquid
H304	May be fatal if swallowed and enters airways

Precautionary Statements:

P210	Keep away from flames and hot surfaces. -- No smoking
P280	Wear protective gloves and eye / face protection

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331	Do NOT induce vomiting
P370 + P378	In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish
P403 + P235	Store in a well-ventilated place. Keep cool
P405	Store locked up
P501	Dispose of contents and container in accordance with local regulations

Physical/Chemical Hazards:
Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Combustible.

Health Hazards:
Repeated exposure may cause skin dryness or cracking. May be irritating to the eyes, nose, throat, and lungs.

Environmental Hazards:
No significant hazards

NFPA Hazard ID:	Health: 1	Flammability: 2	Reactivity: 0
HMIS Hazard ID:	Health: 1[1]	Flammability: 2	Reactivity: 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This material is defined as a complex substance.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Chemical Name	CAS#	Concentration (%)[2]	GHS Hazard Codes
Naphtha (petroleum), hydrotreated heavy	64742-48-9	100%	H227, H304

SECTION 4: FIRST AID MEASURES

Eyes:	Flush thoroughly with water. If irritation occurs, get medical assistance.
Skin:	Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.
Inhalation:	Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation,

[1] All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume Concentration values may vary.
[2] As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Ingestion: Seek immediate medical attention. Do not induce vomiting.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: If ingested material may be aspirated into the lungs and cause chemical pneumonia. Treat appropriately.

SECTION 5: FIRE FIGHTING MEASURES

FIRE FIGHTING

Appropriate Extinguishing Media:
Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media:
Straight Streams of Water

Special Fire Fighting Procedures:
Combustible. Evacuate area. Prevent runoff from fire control or dilution From entering streams, sewers, or drinking water supplies. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products:
Oxides of carbon, Smoke, Fume, Incomplete combustion products.

Unusual Fire Hazards: Combustible.

FLAMMABILITY PROPERTIES

Flash Point [Method]: 62°C 144°F [ASTM D-93]

Flammable Limits (Approximate volume % in air):
LEL: 0.7 UEL: 5.3

Autoignition Temperature:
335°C 635°F

SECTION 6: ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

General:
In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

General:
Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information.

See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders:

Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill:

Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces. Recover by pumping or with suitable absorbent.

Water Spill:

Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Note:

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted.
Local regulations may prescribe or limit action to be taken.

SECTION 7: HANDLING AND STORAGE

HANDLING

General:

Avoid contact with skin. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or

National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Loading/Unloading Temperature: [Ambient]
Transport Temperature: [Ambient]
Transport Pressure: [Ambient]
Static Accumulator:

This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

STORAGE

General:

The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

Storage Temperature: [Ambient]
Storage Pressure: [Ambient]
Suitable Containers/Packing:

Tankers; Tank Trucks; Railcars; Barges; Drums

Suitable Materials and Coatings (Chemical Compatibility):

Inorganic Zinc Coatings; Epoxy Phenolics; Teflon; Neoprene; Stainless Steel; Carbon Steel

Unsuitable Materials and Coatings:

Vinyl Coatings; Natural Rubber; Butyl Rubber; Ethylene-proplyene-diene monomer (EPDM)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure Limits/Standards:

Substance Name	Form	Limit / Standard			Source
NAPHTHA (PETROLEUM), HYDROTREATED HEAVY	N/A	TWA	400 mg/m3	100 ppm	OSHA Z1
NAPHTHA (PETROLEUM), HYDROTREATED HEAVY	Vapor	RCP - TWA	1200 mg/m3	171 ppm	Manufacturer

Note: Exposure limits are not additive. Limits/standards shown for guidance only. Follow applicable regulations. No biological limits allocated.

ENGINEERING CONTROLS

Control measures to consider:

Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion-proof ventilation equipment.

Note: The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

PERSONAL PROTECTION

Note: Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection:

If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: Half-face filter respirator. For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection:

Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include: If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection:

If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection:

Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

Specific Hygiene Measures:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

NOTE: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State:	Liquid or gel
Form:	Clear
Color:	Colorless
Odor:	Odorless
Odor Threshold:	N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.765
Density (at 15 ºC): 764 kg/m³ (6.38 lbs/gal, 0.76 kg/dm³)
Flammability (Solid, Gas): N/A
Flash Point [Method]: 62°C (144°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 5.3
Autoignition Temperature: 335°C (635°F)
Boiling Point / Range: 189°C (372°F) - 209°C (408°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): 5.6 at 101 kPa
Vapor Pressure: 0.041 kPa (0.31 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): 0.09
pH: N/D
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: 1.56 cSt (1.56 mm2/sec) at 40 °C | 2.02 cSt (2.02 mm2/sec) at 25°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/D
Pour Point: -69°C (-92°F)
Molecular Weight: 162
Hygroscopic: No
Coefficient of Thermal Expansion: 0.00078 V/VDEGC

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

HAZARD CLASS	CONCLUSION/REMARKS
Inhalation	
Acute Toxicity: (Rat) 8 hour(s) LC50 > 5000 mg/m3 (Vapor)	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401
Skin	
Acute Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402
Skin Corrosion/Irritation: Data available.	May dry the skin leading to discomfort and dermatitis. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
Eye	
Serious Eye Damage/Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: Data available.	Not expected to be a germ cell mutagen. Based on test data for structurally similar materials. Tests equivalent or similar to OECD Guideline 471 473 474 476 478 479

Carcinogenicity: Data available.	Not expected to cause cancer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 453
Reproductive Toxicity: Data available.	Not expected to be a reproductive toxicant. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 414 421 422
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: Data available.	Not expected to cause organ damage from prolonged or repeated exposure. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 408 413 422

OTHER INFORMATION

For the product itself:

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION

Ecotoxicity: Not expected to be harmful to aquatic organisms.
Not expected to demonstrate chronic toxicity to aquatic organisms.

PERSISTENCE AND MOBILITY

Biodegradation: Expected to be inherently biodegradable.
Hydrolysis: Transformation due to hydrolysis is not expected to be significant.
Photolysis: Transformation due to photolysis is not expected to be significant.
Atmospheric: Expected to degrade rapidly in air.

OTHER ECOLOGICAL INFORMATION

VOC (EPA Method 24): 6.401 lbs/gal

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus mykiss	LL0 1000 mg/l: data for similar materials
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL0 1000 mg/l: data for similar materials

Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	EL0 1000 mg/l: data for similar materials
Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 1 mg/l: data for the material
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	NOELR 1000 mg/l: data for similar materials

Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Water	Ready Biodegradability	28 day(s)	% Degraded 31.3 : similar material

SECTION 13: DISPOSAL CONSIDERATIONS

NOTE: Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at the time of disposal.

Waste Disposal: Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container: Empty containers may contain residue and can be dangerous.
Do not attempt to clean container without proper instructions.
Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations.
DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14: TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: Petroleum distillates, N.O.S.
Hazard Class: Combustible liquid

ID Number: 1268
Packing Group: III
ERG Number: 128
Label(s): None
Transport Doc. Name: UN1268, PETROLEUM DISTILLATES, N.O.S., COMBUSTIBLE LIQUID, PG III
Note: This material is not regulated under 49 CFR in a container of 119 gallon capacity or less
when transported solely by land, as long as the material is not a hazardous waste, a marine pollutant, or specifically listed as a hazardous substance.

LAND (TDG)
Not Regulated for Land Transport

SEA (IMDG)
Not Regulated for Sea Transport according to IMDG-Code
Marine Pollutant: No

AIR (IATA)
Not Regulated for Air Transport

SECTION 15: REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD
This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.
Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

EPCRA SECTION 302
This material contains no extremely hazardous substances.

CERCLA
This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLA petroleum exclusion applies for this product. Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE HAZARD CATEGORIES
Fire. Immediate Health. Delayed Health.

SARA (313) TOXIC RELEASE INVENTORY
This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below: None

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16: OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Updates made in accordance with implementation of GHS requirements.

The information and recommendations contained herein are, to the best of Gamblin's knowledge and belief, accurate and reliable, but it is not warranted to be. You can contact Gamblin to ensure that this document is the most current available. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use and it is the user's responsibility to carefully read the product label and follow instructions for safe use of the product.