SAFETY DATA SHEET

SECTION 01 – IDENTIFICATION

Product Name/Identifier:
Unisub Steel

Recommended Use:
Hard Surface Sublimation Signage Media

Supplier Identification:
Universal Woods LLC
2600 Grassland Dr.
Louisville, KY 40299-2591
USA
Emergency Telephone No: (502) 491 1477
Other Information Calls: (502) 491 1461

Emergency Information:
CHEMTREC (24 hrs)
U.S./North America: (800) 424-9300
International: (703) 527-3887

SECTION 02 – HAZARD(S) IDENTIFICATION

GHS-US Hazard Classification
This product is an article as defined under OSHA regulation 29 CFR 1910.1200. In its manufactured and shipped form, this product does not present hazards leading to physical or health hazards under GHS hazard classification.
Hazards not otherwise classified: Certain processing conditions which will alter the present form may change the hazardous nature of the product. The classification presented below is based on the potential of chemical exposure upon alteration of the present form:

- Combustible Dust (May form combustible dust concentrations in air.)
- Hazardous Fumes (May form inhalable fumes during welding, burning, grinding, etc.)

Label Elements
No labeling required.

Other Hazards
Further fabrication, such as welding, grinding, cutting, drilling, etc. of this product may produce dust or fumes, which may irritate the eyes, skin and respiratory system.

Unknown acute toxicity
Not applicable.

SECTION 03 – COMPOSITION/INFORMATION ON INGREDIENTS

Substance
This material is non-galvanized steel. As such, it is essentially inert (non-toxic) during handling and storage
Please Note: Other components used in the sublimation process such as inks are separate materials and are not covered in this SDS.

Mixture

Chemical Name	CAS Number	Weight %
Iron	7439-89-6	90-100
Manganese	7439-96-5	0-2
Chromium	7440-47-3	0-1
Silicon	7440-21-3	0-1
Nickel	7440-02-0	0-0.4
Vanadium	7440-62-2	0-0.2
Surface Finish	Trade Secret	<0.01

Surface finishes are factory applied. These products are classified as an "article" according to 29 CRF 1910.1200(c). There is no release any hazardous chemical under normal conditions of use.

SECTION 04 – FIRST-AID MEASURES

Description of First Aid Measures
Eyes: Unlikely route of exposure as sold/shipped. Dust or fumes from further processing may cause irritation. Flush eyes with large amounts of water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing. If eye irritation persists, seek medical advice or attention.
Skin: Does not pose a potential of skin irritation and sensitization as sold/shipped. Wash affected areas with soap and water. If persistent irritation or dermatitis occurs, seek medical advice or attention.
Inhalation: Unlikely route of exposure as sold/shipped. Dust or fumes in high concentrations from further processing may cause irritation of respiratory system. Move to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should administer oxygen. If feeling unwell, seek immediate medical or attention.
Ingestion: Unlikely route of exposure as sold/shipped. Dust from further processing may be harmful if swallowed, rinse mouth thoroughly. If feeling unwell, seek medical advice or attention.

Most Important Symptoms
Acute and Delayed Effects: Dust or fumes from further processing may cause an acute or chronic helath effect. Refer to section 11 Toxicological Information.
Chronic Effects: Dust or fumes from further processing may cause an acute or chronic helath effect. Refer to section 11 Toxicological Information.
Aggravated Medical Conditions: Dermal irritation.

Indication of Immediate Medical Attention/Special Treatment: Treat symptomatically.

SECTION 05 – FIRE-FIGHTING MEASURES

Extinguisher Media
As shipped, this product does not present fire or explosion hazards. Use extinguishers appropriate for surrounding materials.

Special Hazards
Flammable Properties: As shipped, this product does not present fire hazard. **Explosive Limits:** As shipped, this product does not present explosion hazards. Avoid generation of dust, sufficient concentrations in the air in the presence of an ignition source is a potential explosion hazard. See below under Unusual Fire and Explosion Hazards.

Unusual Fire and Explosion Hazards: During further processing of product such as welding, toxic smoke, fume, and vapor may be emitted.

Advice for Fire Fighting: Full protective clothing and self-contained NIOSH approved respiratory protection should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

SECTION 06 –ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation. Use personal protective equipment. Avoid generation of dust or allow dust deposits to accumulate as these may form explosive mixture if released into the atmosphere in sufficient concentration.

Methods for Containment
Not applicable for product as shipped. Contain for re-use.

Methods for Cleaning Up
No special precautions for large product fragments. For dust cleanup use protective equipment to avoid contact with eyes and skin. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

SECTION 07 –HANDLING AND STORAGE

Safe Handling
Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid dust formation. Do not breathe vapors/dust.
Do not touch heated product without knowing metal temperature. Product experiences no color change during heating. Contact with hot metal can cause skin and eye burns.

Safe Storage
Keep in a dry, cool and well-ventilated place. Store away from acids and incompatible materials.

SECTION 08 –EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines: The following table lists exposure limits for all chemicals listed in Section 3 where a limit exists.

Chemical Name	CAS	ACGIH (TLV TWA)	OSHA PEL
Iron	7439-89-6	5.0 mg/m^3 (as iron oxide dust and fume)	TWA: 10 mg/m^3 (as iron oxide fume)
Silicon	7440-21-3	10 mg/m^3	TWA: 5 mg/m^3 (respirable)
Manganese	7439-96-5	0.2 mg/m^3	Ceiling: 5 mg/m^3
Chromium	7440-47-3	0.5 mg/m^3	TWA: 0.5 mg/m^3
Nickel	7440-02-0	1.5 mg/m^3 (inhalable fraction)	TWA: 1.0 mg/m^3
Vanadium	7440-62-2	0.05 mg/m^3 (inhalable fraction)	Ceiling: 0.5 mg/m^3(respirable)

Engineering Controls
Ensure adequate ventilation. Usually not necessary to reduce exposures to TLV during normal expected use. General or local exhaust may be necessary to minimize odors or fumes in small rooms. All confined space work should be done in accordance with OSHA 1910.146.
Formation of dust and fumes. It is recommended that all dust control equipment such as local exhaust ventilation contain explosion relief vents or an explosion suppression system. Ensure that dust-handling systems are designed in a manner to prevent the escape of dust into the work area.

Personal Protective Equipment

Hand protection: Possible material handling hazard (cuts, abrasion). Use cut-proof cloth or leather gloves if necessary or requested. Possible burns when heated. Use heat-resistant gloves if necessary or requested.

Eye Protection: Safety glasses required.

Respiratory Protection: Usually not necessary to reduce exposures to TLV during anticipated normal use. If requested, due to odor or if TLV is exceeded; use NIOSH-approved respirator selected for suitability to provide adequate worker protection for given conditions.

Other Protective Clothing or Equipment: None known.

SECTION 09 –PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Appearance/Color: Silver/gray metal sheet with white or clear factory finish

Odor: Odorless as manufactured and shipped. The sublimation process may create a slight odor.

pH: N/A

Melting Point Range: -2750 ˚F / -10510 ˚C

Boiling Point: not determined for product

Flash Point: N/A

Evaporation Rate (BuAc = 1): N/A

Flammability(solid): Non-flammable, non-combustible

Explosion Limits: no data available

Vapor Pressure (mm Hg): N/A

Percent Volatile by Volume (%): 0

Vapor Density (Air = 1): no data available

Relative Density: 7-8

Solubility in Water: no data available

Reactivity in Water: none known

SECTION 10 –STABILITY AND REACTIVITY

Reactivity

This product is not reactive as manufactured and shipped. Dust or fine particles are violently reactive to strong oxidizers with considerable heat generation.

Chemical Stability

Stable under recommended storage conditions.

C**onditions to Avoid**

Avoid storage or potential contact with strong acids or calcium hypochlorite. Avoid formation of dust or fumes.

Incompatibility (Materials to Avoid)

Will react with strong acids to form hydrogen. Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.

Hazardous Decomposition Products

Thermal oxidative decomposition of steel products can produce fumes containing oxides of iron and manganese as well as other alloying elements.

SECTION 11 –TOXICOLOGICAL INFORMATION

As manufactured and shipped, no hazards anticipated during expected handling and storage.

Chronic Toxicity:	No known chronic effects of components present at greater than 1%.
Carcinogenicity:	No known carcinogens are present at greater than 1%.
Sensitization:	None known
Mutagenic Effects:	None known
Reproductive Toxicity:	None known
Developmental Toxicity:	None known
Target Organ Effects:	No known effects under normal use conditions.

The following toxicity data has been determined for this product when further processed (welding, cutting, etc) using the information available for the components within its mixture, applied to the guidance on the preparation of an SDS under the GHS requirements of OSHA.

Hazard Classification	OSHA Hazard Category	Hazard Symbol	Signal Word	Hazard Statement
Acute Toxicity - Oral (covers Categories 1, 2, 3 and 4)	4		Warning	Harmful if swallowed
Eye Damage/ Irritation (covers Categories 1, 2A and 2B)	2B	No pictogram	Warning	Causes eye irritation.
Skin/Dermal Sensitization (covers Category 1)	1		Warning	May cause an allergic skin reaction.
Carcinogenicity (covers Categories 1A, 1B and 2)	1B		Warning	May cause cancer.
Toxic Reproduction (covers Categories 1A, 1B and 2)	2		Danger	May damage fertility or the unborn child.
Specific Target Organ Toxicity (STOT) Following Single Exposure (covers Categories 1-3)	3		Warning	May cause respiratory irritation
STOT following Repeated Exposure (covers Categories 1 and 2)	1		Danger	Causes damage to lungs through prolonged or repeated inhalation exposure.

SECTION 12 –ECOLOGICAL INFORMATION

As sold/shipped, there is no data available on toxic effects upon the environment.

Ecotoxicity: No Information available on the adverse effects
Mobility: No Information available on the adverse effects
Persistence and Degradability: No Information available on the adverse effects
Bioaccumulative Potential: No Information available on the adverse effects
Other Adverse Effects: No Information available on the adverse effects

Metal dusts of individual components in its mixture created from further processing may migrate into soil and groundwater and be ingested by wildlife:

Ecotoxicity (aquatic and terrestrial):

• Iron Oxide: LC50: >1000 mg/L; Fish 48 h-EC50 > 100 mg/L (Currenta, 2008k); 96 h-LC0 ≥ 50,000 mg/L Test substance: Bayferrox 130 red (95 – 97% Fe_2O_3; < 4% SiO_2 and Al_2O_3) (Bayer, 1989a).

• Nickel Oxide: IUCLID found LC50 in fish, invertebrates and algae > 100 mg/l

Mobility (in soil): Individual components have been found to be absorbed by plants from soil.
Persistence and Degradability: No Information available on the adverse effects
Bioaccumulative Potential: No Information available on the adverse effects
Other Adverse Effects: No Information available on the adverse effects

SECTION 13 –DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Recycle wherever possible. Dispose of in accordance with all applicable federal, state, and local environmental laws and regulations.

Product dusts and fumes from processing operations should also be recycled, or classified by a competent environmental professional and disposed of in accordance with applicable federal, state, and local regulations.

SECTION 14 –TRANSPORT INFORMATION

DOT (Department of Transportation): Non-regulated
Hazard Class or Division: Non-regulated
IMO/IMDG code (Ocean) Hazard Class of Division: Non-regulated
IATA: Considered non-hazardous for air transport
TDG (Transport Dangerous Goods): No TDG classification

SECTION 15 –REGULATORY INFORMATION

The following listing of regulations relating to this product as manufactured and shipped may not be complete and should not be solely relied upon for all regulatory compliance responsibilities**.**
As sold/shipped, the product is not listed by OSHA or EPA as a whole or mixture, however individual components are listed.

U.S. Federal Regulatory Information

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	Threshold Values %
Manganese	7439-96-5	<2	1.0
Chromium	7440-47-3	<1	1.0
Nickel	7440-02-0	<0.4	0.1

SARA 311-312 Hazard Categories

Acute Health Hazard	No (as sold/shipped)
Chronic Health Hazard	No (as sold/shipped)
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

State Regulations

This product is not listed as a whole in any state regulations. However, individual components of the product are listed in various state regulations:
Pennsylvania Right to Know/New Jersey/Minnesota/ Massachusetts:
• Hazardous Substances: Manganese, Chromium, Silicon, Nickel, Vanadium
• Environmental Hazards: Manganese, Chromium, Nickel, Vanadium
• Special Hazardous Substance: Chromium, Nickel
California Prop 65:

WARNING: This product can expose you to chemicals including nickel, which is known to the State of California to cause cancer, and hexavalent chromium, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16 –OTHER INFORMATION

Issuing Date: Expiration Date: April, 2022
6/2012 (original)
9/2015 (revision GHS)
4/2019 (update revision)

Disclaimer
The condition or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this reason, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use, or disposal of the product.