

1. Product Application

Siniat Master Grid is used as a suspended ceiling grid consisting of Main Tee's, Cross Tee's, Hangers and Suspension Wire, produced from galvanized steel and classified as non hazardous to work with.

2. Physical Description and Properties

-) Appearance and odour: Metallic Grey, Odourless. Exposed Grid has a white capping.
-) Odor Threshold: Not applicable
-) Vapour Pressure: Not applicable
-) Vapour Density: Not applicable
-) Specific gravity of base material: 7.85
-) pH: Not applicable
-) Water solubility: Insoluble
-) Boil Point: Not applicable
-) Viscosity: Not applicable
-) Refractive Index: Not applicable
-) Surface Tension: Not applicable
-) % Volatile: None
-) Evaporation rate: Not applicable
-) Freezing / Melting Point: Base Metal 1510°C

3. Composition

Base Material:

Main Elements:

Ingredient Name	CAS Number	Percentage by Weight
<i>Main Elements</i>		
Fe	7439-89-6	> 90%
Mn	7439-96-5	< 3.0%
Al	7429-90-5	<1.5%
Cr	7440-02-0	1.5%

Trace Elements:

<i>Other Elements</i>	Percentage by Weight
Si	<1.0%
P	<0.1%
Cu	<0.6%
Nb	<0.1%
V	<0.3%
Ti	<0.2%
Mo	<0.6%
Ni	<1.0%

Metallic Coating: Pure Zinc

Surface Treatment: Oil. The chromate content is generally lower than 50mg/m² when applied.

Hazardous Impurities: None

4. Identification of Hazards and First Aid Measures

Primary Entry Routes: Inhalation and skin due to galvanized coating. Steel products in the natural state do not present an inhalation, ingestion or contact hazard. However, operations such as burning, sawing and grinding may result in the following effects with prolonged exposures and without the wearing of the recommended personal protective equipment:

Respiratory System: Acute Effects

Inhalation: Excessive exposure to high concentrations of dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns from many metals can produce an acute reaction known as "metal fume fever". Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. The symptoms come on in a few hours after excessive exposures and usually last from 12 to 48 hours. Long-term effects from metal fume fever have not been noted. Freshly formed oxide fumes of manganese and copper have been associated with causing metal fume fever. Inhalation of chromium compounds may cause upper respiratory tract irritation. Nickel and phosphorus oxide are respiratory tract irritants.

- J **Eyes:** Particles of iron or iron compounds could become imbedded in the eye. Torching or burning operations on steel products with surface treatments, oil coatings, or acrylic films may produce emissions that can be irritating to the eyes.
- J **Skin:** Skin contact with metallic fumes and dusts may cause physical abrasion. Exposure to nickel may cause contact and atopic dermatitis and allergic sensitization. Repeated or prolonged contact with chemical surface treatments or oil residue may cause skin irritation, dermatitis, ulceration or allergic reactions in sensitized individuals.
- J **Ingestion:** Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of dust may cause nausea or vomiting.

Chronic Effects: Chronic inhalation of metallic fumes and dusts are associated with the following conditions:

- J **IRON OXIDE:** Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign pneumoconiosis, called siderosis, which is observable as an X-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Iron oxide is listed as a Group 3 (not classifiable) carcinogen by IARC (The International Agency for Research on Cancer).
- J **ALUMINUM:** Aluminum dusts/fines are a low health risk by inhalation and should be treated as a nuisance dust. Aluminum dust is a respiratory and eye irritant.
- J **CARBON:** Chronic inhalation of high concentrations to carbon may cause pulmonary disorders.
- J **CHROMIUM:** The health hazards associated with exposure to chromium are dependent upon its oxidation state. The metal form (chromium as it exists in this product) is of very low toxicity. The hexavalent form is very toxic. Repeated or prolonged exposure to hexavalent chromium compounds may cause respiratory irritation, nosebleed, ulceration and perforation of the nasal septum. Industrial exposure to certain forms of hexavalent chromium has been related to an increased incidence of cancer. The National Toxicology Program (NTP) Fourth Annual report on Carcinogens cites "certain Chromium compounds" as human carcinogens. ACGIH has reviewed the toxicity data and concluded that chromium metal is not classifiable as a human carcinogen.
- J **COPPER:** Inhalation of high concentrations of freshly formed oxide fumes and dusts of copper can cause metal fume fever. Chronic inhalation of copper dust has caused, in animals, hemolysis of the red blood cells, deposition of hemofuscin in the liver and pancreas, injury to lung cells and gastrointestinal symptoms.
- J **MANGANESE:** Chronic exposure to high concentrations of manganese fumes and dusts may adversely affect the central nervous system with symptoms including languor, sleepiness, weakness, emotional disturbances, spastic gait, mask-like facial expression and paralysis. Animal studies indicate that manganese exposure may increase susceptibility to bacterial and viral infections.
- J **NICKEL:** Exposure to nickel dusts and fumes can cause sensitization dermatitis, respiratory irritation, asthma, pulmonary fibrosis, edema and may cause nasal or lung cancer in humans. IARC lists nickel and certain nickel compounds as Group 2B carcinogens (sufficient animal data). ACGIH 2009 TLVs® and BEIs® lists insoluble nickel compounds as confirmed human carcinogens.
- J **PHOSPHOROUS:** Inhalation of phosphorous oxides may cause respiratory irritation.
- J **SILICON:** Silicon dusts are a low health risk by inhalation and should be treated as a nuisance dust. Eye contact with pure material can cause particulate irritation. Skin contact with silicon dusts may cause physical abrasion.

-) ZINC: Welding and burning on zinc-coated steel has been implicated in cases of metal fume fever. Latent liver dysfunction and gastrointestinal disturbances with pressure in the stomach region, nausea, and weakness have been reported from repeated inhalation zinc oxide. Repeated or prolonged skin contact to zinc oxide, coupled with poor personal hygiene, may result in "oxide pox" due to clogging of sebaceous glands. "Oxide pox", especially localized to moist areas, is characterized by small red, hard projecting papules with a central white plug, which develops into a pustule with intense itching. The lesions usually clear within 7-10 days. Repeated or prolonged eye contact with zinc oxide fume may produce conjunctivitis. Long-term inhalation exposure to high concentrations (over-exposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects.

5. **Exposure controls / personal protection**

-) **Whole body protection:** Wear protective clothing
) **Protection of hands:** Wear gloves to prevent cutting
) **Protection of eyes and / or face:** Safety glasses when opening packaging
) **Protection of feet:** Wear of safety shoes

6. **Precautions to be taken during storage and packaging**

-) Safety gloves (to prevent cuts), glasses and safety shoes need to be worn.
) Risk of oil retention in bottom of packaging, The risk of potential slipping should be kept in mind with empty grid boxes
) Product must not be stored where acids are present.