

Material Safety Data Sheet

SULZER

Metco 601NS, SPM 2-2658, AMDRY 2010

Sulzer Metco

1. Product and company identification

Common name : Metco 601NS, SPM 2-2658, AMDRY 2010
Material uses : Metal industry: Used by spraying
Supplier : Sulzer Metco (US) Inc.
1101 Prospect Avenue
Westbury, NY 11590
Telephone no. : (516) 334 - 1300 (7:30AM - 4:00PM)
Emergency Phone : **CHEMTREC 800-424-9300**
Calls Outside the United States : **+1 202-483-7616 (USA) 24 hour Chemtrec International Emergency Response Service**

2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview

Physical state : Solid. [Metallic powder.]

Color : Gray.

Odor : Odorless.

Health hazards : Warning!

CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.

Potential acute health effects

Routes of entry : Inhalation, Ingestion, Skin contact, Eye contact

Eyes : Moderately irritating to eyes.

Skin : Exposure to high concentrations may result in health complaints. Prolonged or repeated exposure may be irritating (redness, pain).

Inhalation : Exposure to high concentrations may result in health complaints. Irritating to respiratory system. Exposure may result in depressed respiration, coughing, nausea and sore throat. Prolonged or repeated exposure to large amounts may cause damage to lungs (lung edema).

Ingestion : Prolonged or repeated exposure may be irritating to mouth, throat and esophagus (sore throat, nausea).

Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

Environmental effects : No known significant effects or critical hazards.

3. Composition/information on ingredients

<u>Ingredient name</u>	<u>CAS Number</u>	<u>% by weight</u>
Aluminum Powder	7429-90-5	53
Poly-p-oxybenzoate powder	26099-71-8	40
Silicon	7440-21-3	7

4 . First aid measures

- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Inhalation** : Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

5 . Fire-fighting measures

- Auto-ignition temperature** : Not available.
- Flash point** : None.
- Flammable limits** : Not Combustible
- Extinguishing media**
- Suitable** : Use approved Class D extinguisher or smother with dry sand, dry clay or dry ground limestone.
- Not suitable** : Do not use water. Do not use dry chemical, CO₂ or halon.
- Special exposure hazards** : Fine dust clouds may form explosive mixtures with air.
- Hazardous thermal decomposition products** : Some metallic oxides.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : In case of fire at elevated temperatures this material may evolve hydrogen on contact with extinguishing water, due to the presence of elemental aluminum.
- Fire hazards in the presence of various substances** : Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and shocks and mechanical impacts
- Explosion hazards in the presence of various substances** : Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and shocks and mechanical impacts

6 . Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment. Do not touch or walk through spilled material.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. Pick up material with non - sparking shovel or explosion proof vacuum cleaner. Place spilled material in an appropriate container for disposal. Avoid creating dusty conditions and prevent wind dispersal. Recycle, if possible.

7 . Handling and storage

- Handling** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Keep away from heat, sparks and flame. Will react with water or steam to produce heat and toxic fumes. To avoid fire, eliminate ignition sources. Avoid creating dusty conditions when handling.
- Storage** : Keep container in a cool, well-ventilated area.

8 . Exposure controls/personal protection

Product name

United States

Aluminium powder

Exposure limits

ACGIH TLV (United States, 1/2006).

TWA: 5 mg/m³, (as Al) 8 hour(s).

TWA: 10 mg/m³ 8 hour(s). Form: Dust

TWA: 5 mg/m³, (as Al) 8 hour(s). Form: Fume

NIOSH REL (United States, 12/2001).

TWA: 5 mg/m³ 10 hour(s). Form: Respirable fraction

TWA: 10 mg/m³ 10 hour(s). Form: Total

OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³, (as Al) 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³, (as Al) 8 hour(s). Form: Total dust

Silicon

OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

Canada

Aluminium powder

ACGIH TLV (United States, 1/2006).

TWA: 5 mg/m³, (as Al) 8 hour(s).

TWA: 10 mg/m³ 8 hour(s). Form: Dust

TWA: 5 mg/m³, (as Al) 8 hour(s). Form: Fume

Mexico

Aluminium powder

NOM-010-STPS (Mexico, 9/2000).

LMPE-PPT: 5 mg/m³ 8 hour(s).

LMPE-PPT: 5 mg/m³ 8 hour(s). Form: Powder

Silicon

NOM-010-STPS (Mexico, 9/2000).

LMPE-CT: 20 mg/m³ 15 minute(s).

LMPE-PPT: 10 mg/m³ 8 hour(s).

Consult local authorities for acceptable exposure limits.

- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protective equipment

- Eyes** : Safety glasses or goggles are recommended when handling this material. During the thermal spray process, safety goggles and dark lenses must be worn.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Rubber or other appropriate gloves should be worn to minimize contact. For hygienic reasons rubber gloves should not be worn for more than 2 hours. During the thermal spray process, heat insulated gloves are recommended.
- Hearing Protection** : During the thermal spray process, the operator and other personnel close to the spray operation must be protected from excessive noise. Hearing protection that meets local standards should be used.

Protective Clothing (Pictograms) :



Personal protection in case of a large spill : Wear suitable protective clothing, gloves and eye/face protection.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

- Physical state** : Solid. [Metallic powder.]
- Color** : Gray.
- Odor** : Odorless.
- Taste** : Not available.
- Molecular weight** : Not applicable.
- Molecular formula** : Not applicable.
- pH** : Not applicable.
- Boiling/condensation point** : Not available.
- Melting/freezing point** : 590 to 700°C (1094 to 1292°F)
- Explosive properties** : Fine dust clouds may form explosive mixtures with air.
- Specific gravity** : Weighted average: 2.65 (Water = 1)
- Vapor pressure** : Not available.
- Volatility** : Not applicable.
- Odor threshold** : Not available.
- Evaporation rate** : Not available.
- VOC** : Not applicable.
- Partition coefficient** : Not available.
- Ionicity (in water)** : Not available.
- Dispersibility properties** : Not available.
- Solubility** : Insoluble in the following materials: cold water and hot water.

- Physical/chemical properties comments** : Insoluble.
- Flash points** : None.
- Flammable limits** : Not Combustible
- Flammability (solid, gas)** : This material has been tested under UN criteria and found not to be flammable and therefore, not to meet the definition of a hazard class 4 for transport.
- Auto-ignition temperature** : Not available.

10 . Stability and reactivity

- Stability and reactivity** : The product is stable under normal storage conditions.
- Incompatibility with various substances** : Not available.
- Hazardous decomposition products** : Ozone and nitric oxide are formed by plasma flame. This action is independent of material. Some metallic oxides.
- Conditions to avoid** : Store and use away from heat, sparks, open flame or any other ignition source.
- Materials to avoid** : Avoid contact with combustible materials, acids, oxidizing agents, halogenated hydrocarbons.
- Conditions of reactivity** : Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and shocks and mechanical impacts.
Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and shocks and mechanical impacts.
- Conditions of instability** : Not available.

11 . Toxicological information

Toxicity data

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
poly(oxy-1,4-phenylenecarbonyl)	LD	Rat	>10 g/kg	-
Silicon	LD50	Rat	3160 mg/kg	-
	LDLo	Rat	500 mg/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Aluminium powder	-	-	-	None.	-	-
Silicon	-	-	-	None.	-	-

Other toxic effects on humans : No specific information is available in our database regarding the other toxic effects of this material to humans.

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Reproduction toxicity : No known significant effects or critical hazards.

Target organs : Contains material which causes damage to the following organs: upper respiratory tract, skin, eye, lens or cornea.

Irritancy

Ingestion : No known significant effects or critical hazards.

Inhalation : Irritating to respiratory system.

Eyes : Moderately irritating to eyes.

Skin : Irritating to skin.
Synergistic products : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
Aluminium powder	Mortality	Acute LC50 0.31 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.16 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.12 mg/L	Fish	96 hours

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

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

Products of degradation : Some metallic oxides.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal of packaging materials : Contaminated packaging material should be disposed of in the same manner as the product itself. Non-contaminated or clean packaging material, should be reused for the same product, treated as domestic waste, or material for recycling.

Consult your local or regional authorities.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-	-			
TDG Classification	Not regulated.	-	-			
ADR/RID Class	Not regulated.	-	-			
IMDG Class	Not regulated.	-	-			
IATA-DGR Class	Not regulated.	-	-			

Additional information : This material has been tested under UN criteria and found not to be flammable and therefore, not to meet the definition of a hazard class 4 for transport.

15 . Regulatory information

United States

- HCS Classification** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- U.S. Federal regulations** : TSCA 8(b) inventory: All the ingredients are on the TSCA list.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Aluminium powder; Silicon
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
 Aluminium powder: Fire hazard, reactive; Silicon: Fire hazard, Immediate (acute) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

	<u>Ingredient name</u>	<u>CAS Number</u>	<u>Concentration</u>
Form R - Reporting requirements	: Aluminium powder	7429-90-5	53
Supplier notification	: Aluminium powder	7429-90-5	53
State regulations	<p>Connecticut Carcinogen Reporting: None of the components are listed. Connecticut Hazardous Material Survey: None of the components are listed. Florida substances: None of the components are listed. Illinois Chemical Safety Act: None of the components are listed. Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed. Louisiana Reporting: None of the components are listed. Louisiana Spill: None of the components are listed. Massachusetts Spill: None of the components are listed. Massachusetts Substances: The following components are listed: SILICON DUST Michigan Critical Material: None of the components are listed. Minnesota Hazardous Substances: None of the components are listed. New Jersey Hazardous Substances: The following components are listed: SILICON POWDER New Jersey Spill: None of the components are listed. New Jersey Toxic Catastrophe Prevention Act: None of the components are listed. New York Acutely Hazardous Substances: None of the components are listed. New York Toxic Chemical Release Reporting: None of the components are listed. Pennsylvania RTK Hazardous Substances: The following components are listed: SILICON Rhode Island Hazardous Substances: None of the components are listed.</p> <p>California Prop. 65: No products were found.</p>		

Canada

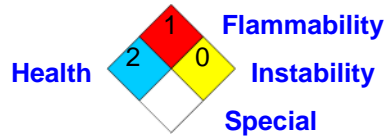
- WHMIS (Canada)** : Not controlled under WHMIS (Canada).
 All the ingredients are on the DSL list.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

16 . Other information

Label requirements : Warning!
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.

National Fire Protection Association (U.S.A.) :



Date of issue : 6/26/2007.

Date of previous issue : 4/10/2006.

Version : 2.02

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.