

DP500 TAB WASHER

Material Safety Data Sheet

Section 1 • IDENTIFIERS

Issue Date: 12/17/97

Section 2 • HAZARDS IDENTIFICATION

Material or Component	CAS#	OSHA PEL	Wt %
Iron	1309-37-1	10mg/m ³ FeO ₂ fume	Bal. of Metal
Copper	7440-50-5	1mg/m ³ Dust, 0.1mg/m ³ fume	0.50 max
Carbon	7440-44-0	N/A	0.01 – 0.75
Nickel**	7440-02-0	1mg/m ³ Dust	0.30 max
Manganese**	7439-96-5	Ceiling & mg/m ³	0.15 – 1.75
Chromium**	7440-47-3	1mg/m ³ Metal	0.20 max
Sulfur	7704-34-9	10mg/m ³	0.00 – 0.50
Phosphorus	7423-14-0	0.1mg/m ³	0.00 – 0.15
Aluminum	7429-90-5	15mg/m ³ Total, 5 Resp. Dust	0.00 – 0.02
Silicon	7440-21-3	15mg/m ³ Total, 5 Resp. Dust	0.00 – 0.50
Molybdenum	7439-98-7	5mg/m ³	0.00/0.10
Zinc**	7440-68-6	5mg/m ³	Bal. of Coating
Antimony**	7440-36-6	0.5mg/m ³	< 0.00 – 0.02

Oil coatings may be used.

**Designated toxic chemicals contained in this product are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right To Know Act of 1985 (40 cfr372).

Section 3 • PHYSICAL DATA

Appearance: Gray to silvery.

Odor: No odor.

Melting Point: 2750°F

Section 4 • FIRE AND EXPLOSION PROCEDURES

Unusual Hazards: At temperatures above the melting point, may liberate fumes of iron, nickel, and zinc oxide.

Steel products in the solid state present no fire or explosion hazards.

Section 5 • HEALTH HAZARD INFORMATION

Health Effects/

Signs and

Symptoms: Steel products in their usual physical form do not pose a health hazard. Inhalation of metal dust and fume may result from further processing of the material by the user, particularly during welding, burning, grinding, and machining activities, and should be evaluated by an industrial hygienist.

Aluminum (Al): Long-term, excessive inhalation exposure to Al dusts or fumes has been associated with a fibrotic lung condition known as Shaver's disease; however, the evidence of this is not conclusive since affected workers were exposed to other substances (such as silica) as well. Symptoms of this condition may include shortness of breath, cough, and fatigue.

Carbon (C): Considered to be a nuisance dust. Excessive dust exposure may irritate the eyes and respiratory tract.

Chromium (Cr): Chromium metal and its divalent and trivalent compounds are of low toxicity. Adverse reactions on the skin may include dermatitis for a Cr-sensitive individual. Long-term, excessive inhalation exposure to ferro-chromium alloys may cause lung changes in workers exposed to these alloys. Exposure to Chromium metal does not give risk to pulmonary fibrosis or pneumoconiosis.

Copper (Cu): Excessive inhalation exposure to Cu fume may cause irritation of the eyes, nose, and throat and a flu-like illness called metal fume fever. Signs and symptoms of metal fume fever include fever, muscle aches, nausea, chills, dry throat, cough, and weakness. Cu fume may also produce a metallic or sweet taste. Long-term, excessive exposure to Cu fume may cause discoloration of the skin and hair.

Iron (Fe): Long-term, excessive inhalation exposure to iron oxide fumes or dust has been associated with a benign lung condition known as siderosis. No physical impairment of lung function has been linked to siderosis.

Lead (Pb): Acute or long-term excessive inhalation exposures to the fumes or dusts of inorganic lead compounds (such as lead oxide) can adversely affect several organ systems including the nervous system, the digestive system, the blood and blood-forming system, and the renal system. Early effects are characterized by fatigue, constipation, muscle aches, abdominal pains, and decreased appetite. Later signs and symptoms can include anemia, pallor, a "lead line" on the gums, and reduced hand-grip. Severe central nervous system and symptoms affects (referred to as lead encephalopathy) usually only occur after heavy and rapid lead exposures. Signs and symptoms include headache, dizziness, convulsions, delirium, comas, and possibly death. Long-term exposures can also produce kidney damage.

continued ...

Manganese (Mn): The dusts and fumes can act as a minor irritant to the eyes and respiratory tract. Acute and long-term, excessive inhalation exposures to the oxide or salts of Mn may adversely affect the central nervous system (CNS), but symptoms are more likely to occur after at least 1 or 2 years of prolonged or repeated exposures. Early symptoms may include weakness in lower extremities, sleepiness, salivation, nervousness, and apathy. In more advanced stages, severe muscular coordination, impaired speech, spastic walking, mask-like facial expressions and uncontrollable laughter may occur. Excessive inhalation exposure to manganese fumes have also been reported to result in metal fume fever, a flu like syndrome with symptoms such as dizziness, chills, fever, headache, and nausea. An increased incidence of pneumonia, bronchitis, and inflammation of the lungs has been reported in some worker populations exposed excessively to manganese.

Molybdenum (Mo): Mo and its compounds generally exhibit a low order of toxicity; however, soluble compounds (such as Mo trioxide) are more toxic. Molybdenum trioxide may produce irritation of the eyes, nose, and throat.

Nickel (Ni): Ni fumes and dusts are respiratory irritants and excessive exposure may cause severe inflammation of the lungs. Prolonged and repeated skin contact with nickel and its compounds may cause an allergic dermatitis. The resulting skin rash is often referred to as "nickel itch". Ni and its compounds may also produce eye irritation, particularly on the inner surfaces of the eyelids. Studies have linked nickel and contain nickel compounds to an increased incidence of cancer of the respiratory system.

Phosphorous (P): The dusts and fumes can act as minor irritants to the eyes, throat, and respiratory tract. Long-term, excessive inhalation of phosphorous compounds may lead to cough, bronchitis, and pneumonia.

Silicon (Si): This is considered to be a nuisance particulate by the American Conference of Governmental Industrial Hygienists (ACGIH).

Zinc (Zn): Acute overexposure to zinc oxide fumes can result in metal fume fever, a temporary flu-like illness with symptoms such as dizziness, chills, fever, headache, and nausea.

Non-Metallic Coatings: Prolonged and/or repeated skin contact with lubricants and rust inhibitors may cause dermatitis. In addition, inhalation of excessive concentrations of vapors or gases, e.g., carbon monoxide (from welding, burning, etc.) may result in dizziness, nausea, headaches, and respiratory tract irritation.

Usual Routes of Entry:	Inhalation
Medical Conditions Possibly Aggravated:	Not determined for these products. Individuals with chronic diseases or disorders should consult a Physician regarding workplace exposure to ingredients.
Carcinogen Information:	The National Toxicology Program (NTP) and the International Agency for Research on Cancer (IARC) consider (1) chromium and certain chromium compounds to be known human carcinogens. (2) nickel and certain nickel compounds to be probable human carcinogens.

Section 6 • FIRST AID AND MEDICAL EMERGENCY PROCEDURES

Eye Contact:	Treat for foreign in the eye. Call a physician.
Skin Contact:	Not anticipated to pose a significant skin hazard. However, should dermatitis develop, wash affected area with mild soap and warm water. Call a physician if conditions persist.
Inhalation:	Remove from excessive exposure levels. Give CPR if breathing has stopped. Get medical attention.
Ingestion:	This product is not considered to be an ingestion hazard.

Section 7 • REACTIVITY DATA

Stability:	Stable.
Conditions To avoid:	Will react with strong acid to liberate hydrogen.

Section 8 • SPILL AND DISPOSAL PROCEDURES

Waste Disposal Method:	Metals may be reclaimed. Dispose of in a landfill in accordance with all local, state, and federal regulations.
------------------------	---

Section 9 • SPECIAL PROTECTION INFORMATION

Respiratory Protection:	When engineering controls are not feasible or sufficient to lower PEL, use a NIOSH/MSHA approved dust and fume respirator to avoid excessive inhalation of particulate should your particulate levels be above the stated Permissible Exposure Limit (PEL).
Ventilation:	Ventilation should be sufficient to maintain exposure below the applicable limits.
Protective Gloves:	Should be worn as required for welding, burning, grinding, or handling operations.
Eye Protection:	Safety glasses or goggles as needed for welding, burning, grinding, or machine operations.