SAFETY DATA SHEET

Tool Steel Holders

Date Created: October 12, 2009 Latest Revision No: 7 Latest Revision: September 17, 2020

Section 1 - Chemical Product and Company Identification

Material Name: All Turning, Grooving, Milling, Threading and Boring Tool Holders.
Chemical Formula: C, Cr, Fe, Mn, Mo, P, Si, S, V (See also Section 3)
CAS No. See Section 3
Manufacturer: Ingersoll Werkzeuge GmbH
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Section 2 - Hazards Identification

All Tools Holders in their solid state and under normal conditions do not present an inhalation, ingestion or skin hazard. However, operations resulting in fume or dust formation such as welding, sawing, brazing, grinding, and machining may present health hazards.

Classification according Regulation (EC) No 1272/2008 [CLP]: Not applicable for articles

Classification according to European Directive 67/548/EEC: Not applicable for articles

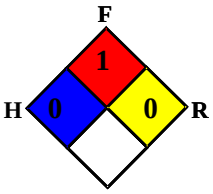
Labeling in accordance with EC No 1272/2008 [CLP]: Not applicable for articles.

Potential Health Effects

Primary Routes of Entry: Inhalation and skin contact.

Chronic Health Effects: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed:

Chromium - various forms of dermatitis, inflammation and/or ulceration of the upper respiratory tract and possibly cancer of nasal passages and lungs. Based on available information, there does not appear to be any evidence that exposure to welding fume induces human cancer.



Iron (as an iron oxide)- prolonged exposure may produce pulmonary effects and/or Siderosis.

Manganese- bronchitis, pneumonitis, lack of coordination.

Vanadium (as vanadium pentoxide)- eye and respiratory tract irritant.

Acute Health Effects: Excessive inhalation of metallic fumes and dusts may result in irritation of eyes, nose, and throat. High concentrations of fumes and dusts of iron oxide, manganese may result in metal fume fever. Typical symptoms consist of a metallic taste in the mouth, dryness and irritation of the throat, chills, and fever. These symptoms may persist from 12 to 48 hours.

Carcinogenic Assessment:

Chromium

ACGIH A4 - Not classifiable as human carcinogen.

IARC GROUP 3 -Unclassifiable as to carcinogenicity to humans.

Section 3 - Composition / Information on Ingredients

Substance Name	Chemical Formula	CAS No.	EC No.	W/W %	OSHA PEL (mg/m3)	ACGIH TLV-TWA (mg/m3)***
Carbon	C	7440-44-0	231-153-3	0.32-0.45	Not established	Not established
Chromium	Cr	7440-47-3	231-157-5	0.7-5.5	1	0.5
Iron	Fe	7439-89-6	231-096-4	Balance	10 as Fe2O3 **	5 as Fe2O3 * **
Manganese	Mn	7439-96-5	231-105-1	0.2-0.8	5 (Ceiling Limit)	0.02 **
Molybdenum	Mo	7439-98-7	231-107-2	0.2-1.75	15 *	10 * 3**
Phosphorous	P	7723-14-0	231-768-7	0.035 Max	0.1	0.1
Silicon	Si	7440-21-3	231-130-8	0.15-1.25	15* 5**	-
Sulfur	S	7704-34-9	231-722-6	0.035 Max	13 as sulfur dioxide	0.25
Vanadium	V	7440-62-2	231-143-9	0.8-1.2	0.5* 0.1** (Ceiling Limit) as V_2O_5	0.05 as V_2O_5 * **

** Values given "as dust"* *** Values given "as FUME"*
**** Last updating of Threshold Limit Values by ACGIH –2020*

Substance Name	H-Statements
Chromium	Resp. Sens 1: H334, Skin Sens. 1: H317
Iron	Flam. Sol. 2: H228
Manganese	Flam. Sol. 2: H228
Molybdenum	Water-react. 1: H260
Phosphorous	Flan. Sol. 2: H228, Acute Tox. 3, Aquatic. Chronic 3: H228, H402, H412
Silicon	Flam. Sol.: H228
Sulfur	Skin Irrit. 2: H315

Section 4 - First Aid Measures

Inhalation: If symptoms of pulmonary involvement develop (coughing, wheezing, dyspnea, etc.) remove the exposed person to fresh air immediately; restore and/or support his or her breathing as needed. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. If symptoms persist, keep affected person warm and at rest. Seek medical attention immediately.

Eye Contact: If irritation occurs, remove contact lenses at once. Flush eyes immediately, including under the eyelids, gently but thoroughly, with plenty of running water for at least 15 minutes. If irritation persists, seek medical attention.

Skin Contact: If irritation or rash occurs, remove contaminated clothing and thoroughly wash the affected area with soap and water. If irritation or rash persists, seek medical attention.

Ingestion: If swallowing of greater than trace amounts is suspected, seek medical attention immediately. If the person is conscious, immediately give person large amounts of water. Induce vomiting only if specifically instructed by a physician. Caution: Never give anything by mouth to an unconscious or convulsing person.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Section 5 - Fire Fighting Measures

Flash Point N/A
Auto-Ignition Temperature N/A **NFPA 0 : 1 : 0**
LEL ---
UEL ---
Extinguishing Media: For dust fires, use dry powder or sand.

Unusual Fire or Explosion Hazards: Dusts may present a fire or explosion hazard under rare favoring conditions of particle size, dispersion, concentration, a static discharge or strong ignition source. However, this is not expected to be a problem under normal handling conditions.

Special Fire-Fighting Procedures: For a dust fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a large tool steel fire, use a self-contained breathing apparatus. See Section 3 and 8 for specific hazard identification and exposure control measures.

Fire-Fighting Equipment: For a powder fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire, fire fighters should use NIOSH/MSHA approved full-face-piece self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout gear. See Sections 3 and 8 for specific hazard identification and exposure control measures.

Hazardous Combustion Products: Respirable metal oxide fume, carbon dioxide and carbon monoxide. See Section 3 for specific hazard identification.

Section 6 - Accidental Release Measures

Spill/Leak Procedures: Do not walk through or otherwise scatter or disperse spilled material. Ventilate area of spill. Clean up area using methods which avoid dust generation such as a high efficiency, particular air (HEPA) vacuum (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet dust mop or wet clean-up. Use an appropriate National Institute of Occupational Safety and Health (NIOSH)-approved respirator whenever airborne concentrations of hazardous components exceed exposure limits listed in Sec. 2.

Section 7 - Handling and Storage

Under normal operating conditions, the use of tool steel products do not require special safety precautions beyond normal safety procedures for handling and using cutting tools, such as safety glasses with side shields and approved gloves. Operations such as grinding, cutting, burning, and welding of tool steel products may generate excessive heat as well as dust or fumes that may require special handling procedures.

Hygienic Practices: Wash hands thoroughly after handling and before eating, smoking, using the toilet or applying cosmetics. Wash all exposed skin at the end of the work shift. The consumption of food and beverages as well as smoking should be prohibited in areas where hazardous components may be present. Do not shake clothing, rags, or other articles to remove dust. Dust should be removed from clothing, rags or other articles by laundering or vacuuming (with the appropriate filters).

Handling and Storage Precautions: Maintain good housekeeping procedures to prevent dust accumulation, especially during grinding. Avoid dust inhalation and direct skin or eye contact with dust. See Section 3 for specific health hazards. Store in a cool, dry, well-ventilated area. Keep away from sparks or ignition source. Keep away from strong acids and strong oxidizers.

Other Precautions: Always perform clean up operations using methods that avoid dust generation such as a HEPA vacuum, wet dust mop or wet clean-up. Use an appropriate NIOSH-approved respirator whenever airborne concentrations of hazardous components exceed exposure limits listed in Section 2.

Comments: Periodic health monitoring is suggested for individuals regularly exposed to dust or fumes, with particular attention to any potential sensitization effects of such materials.

Section 8 - Exposure Controls/Personal Protection

Threshold values:

Chromium

OSHA-PEL 1 mg/m^3

ACGIH-TLV 0.5 mg/m^3 (TWA)

Iron

OSHA-PEL 10 mg/m^3, fume as Fe2O3

ACGIH-TLV 5 mg/m^3 ,fume/dust as Fe2O3

Manganese

OSHA-PEL 5 mg (Mn)/m^3 (CEIL)

ACGIH-TLV 0.02 mg (Mn)/m^3 (TWA), fume

Molybdenum

OSHA-PEL 15 mg/m^3, dust

ACGIH-TLV 3 mg/m^3 (TWA), fume

ACGIH-TLV 10 mg/m^3 (TWA), as dust

Phosphorous

Silicon

OSHA-PEL 0.1 mg/m³
ACGIH-TLV 0.1 mg/m³ (TWA)

OSHA-PEL 15 mg/m³ ,dust
OSHA-PEL 5 mg/m³ , fume

Sulfur
OSHA-PEL 13 mg/m³, as sulfur dioxide
ACGIH-TLV 0.25 mg/m³ (TWA)

Vanadium
OSHA-PEL 0.5 mg/m³ (CEIL), dust as V_2O_5
OSHA-PEL 0.1 mg/m³ , fume as V_2O_5
ACGIH-TLV 0.05 mg/m³ , dust/fume as V_2O_5

IDLH: (Immediately Dangerous to Life and Health):
Chromium: 25 mg Cr(III)/m³
Manganese: 500 mg Mn/m³
Molybdenum: 5000 mg/m³ (as Mo)
Phosphorous (yellow): 5 mg/m³

Ventilation: Provide local exhaust ventilation or general dilution ventilation to maintain exposure levels below TLV TWA.

Protective Clothing and Equipment: Wear safety glasses with side shields when grinding or cutting tool steel products. Wear protective gloves (leather or rubber) or barrier cream, and protective clothing to prevent skin contact with dusts. See Section 3 for specific health hazards.

Respirator: Use a NIOSH-approved respirator with a HEPA cartridge whenever airborne concentrations of hazardous components exceed exposure limits listed in Section 2.

Contaminated Clothing and Equipment: Soiled clothing should be laundered separately. Dust should be removed by water wash or vacuuming with the appropriate filters. Do not shake clothing, rags, or other items to remove dust.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet or applying cosmetics.

Section 9 - Physical and Chemical Properties

Physical State	Solid	**Vapor Pressure (mm Hg)**	Not applicable
Color	Gray black with metallic luster	**Vapor Density (Air = 1)**	Not applicable
Odor	Odorless	**Specific Gravity (H_2O=1)**	Not applicable
Boiling Point	Not applicable	**Percent Volatile by Volume**	Not applicable
Water Solubility	Insoluble	**Evaporation Rate**	Not applicable

Section 10 - Stability and Reactivity

Stability: Stable
Polymerization: Hazardous polymerization will not occur.
Chemical Incompatibilities: Strong acids. Contact of dust with strong oxidizers may cause fire or explosions.
Conditions to Avoid: Not known.
Hazardous Decomposition Products: Respirable metal oxide fume.

Section 11 - Toxicological Information

Carbon: LD_{50} (Oral Rat) 10,000 mg/kg

Iron: LD_{50} (Oral rat) 30,000 mg/kg

Manganese: LD_{50} (Oral rat) 9000 mg/kg

Molybdenum: LD_{50} (Oral rat) 5000 mg/kg
LD_{50} (Dermal rat) 2000 mg/kg

Phosphorous : LD_{50} (Oral rat) 15,000 mg/kg

Silicon: LD_{50} (Oral rat) 3160 mg/kg
LD_{50} (Dermal rabbit) 5000 mg/kg

Vanadium: LD_{50} (Oral rat) 2000 mg/kg

Section 12 - Ecological Information

Iron: LC_{50} 500 mg/L **Manganese:** LC_{50} 3.6 mg/L

Phosphorous : LC_{50} 33.2 mg/L **Sulfur:** LC_{50} 10,000 mg/L

Section 13 - Disposal Consideration

Disposal: Consider recycling. Follow applicable federal, state, and local regulations.

Section 14 - Transport Information

Sea (IMO / IMDG)	Shipping Name:	Not regulated
Air (ICAO /IATA)	Shipping Name:	Not regulated
European Road / Rail (ADR/RID)	Shipping Name:	Not regulated
U. S. Department of Transportation	Shipping Name:	Not regulated
Canadian Transportation of Dangerous Goods	Shipping Name:	Not regulated

Section 15 - Regulatory Information

OSHA:
This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. Dust generated while using this product may be hazardous as noted in Sections 2 and 3.
TSCA:
Components of this product are listed on the TSCA inventory.

SARA:
Aluminum, chromium, cobalt, copper, manganese, nickel, phosphorus, vanadium, and zinc are subject to the requirements of Section 313 of Title III of Superfund Amendment and Reauthorization Act of 1986.
State Regulatory Information:

This product contains chromium, cobalt, and/or nickel, which are listed in California Proposition 65 as known cancer-causing chemicals.

Section 16 - Other Information

Full text of H-statements with No. appearing in section 3:

H228: Flammable solid.
H260: In contact with water releases flammable gases which may ignite spontaneously
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H402: Harmful to aquatic life
H412: Harmful to aquatic life with long lasting effects

This product, to the best of our knowledge and belief, does not contain and is not manufactured with any Class I or Class II Ozone Depleting Chemicals (ODCs).

Disclaimer: This Material Safety Data Sheet and the information it contains is consistent with recommended applications of these products and anticipated non-routine activities involving the products. It is the user's responsibility to identify and protect against health and safety hazards presented by modification of all Turning, Grooving, Milling, Threading, and Boring Tool Holder products after manufacture. Individuals handling all Turning, Grooving, Milling, Threading, and Boring Tool Holder products or powders should be informed of all relevant hazards and recommended safety precautions, and should have access to the information contained in this MSDS.

The details contained in this SDS are believed to be accurate and based on our recent state of knowledge and experience. However,* Ingersoll *make no claim regarding the accuracy or completeness of the information and assume no liability for any loss, damage or injury of any kind which may result from or arise out of the use of or reliance on the information contained in the SDS by any person or entity.