

Document number:	AR/TH-MS-004b	Next Updated:	A/1
Updated number:	A/0	Updated by:	Jenny He
Date of updated:		Approved by:	
Date of approval:	May,16 th ,2013		

1. Product and Company Identification

Company Name: Astar Orthodontics Inc.	Product Grade/ Name: STAINLESS STEEL: 304
Address: Suite1503, Lidu#1 Mansion, Lane#500, South Zhongshan Rd. Section1	Product Use : Stainless Steel Archwires
City: Shanghai	Indication of use: For Professional Orthodontic treatment only.
Country: China	
Telephone: +86-21-6303 1017	
E-mail: service@astar-ortho.com.cn	

2. Composition/Information on Ingredients

Material	CAS Number	%	ACGIH-TLV	OSHA-PEL
Iron	7439-89-6	69.5	None	None
Chromium	7440-47-3	18.50	0.5 mg/m ³	1 mg/m ³ (Dust)
Nickel	7440-02-0	9.0	1 mg/m ³	1 mg/m ³ (Dust)
Manganese	7439-96-5	1.0	0.2 mg/m ³	C 5 mg/m ³ (Dust)
Cobalt	7440-48-7	0.75	0.5 mg/m ³	0.1 mg/m ³ (Dust)
Silicon	7440-21-3	<1.00	10 mg/m ³	None
Carbon	7440-44-0	Less than 1% each	None	None
Phosphorus	7723-14-0			
Sulfur	7704-34-9			

3. Hazard Identification

<p>Made by stainless steel which is widely used in dental field to be proved safe enough, does not contain hazardous or volatile substance. Non-hazardous for human body and health. However, subsequent operations such as brazing, burning, cutting, grinding, heat treating, picking, welding, or processing in any other fashion may produce potentially hazardous dust or fume which can be inhaled, swallowed, or come in contact with skin, eyes, or mucous membranes.</p> <p>Possible symptoms of exposure to dust , fumes, or gages</p> <p>Acute: Irritation of eyes, nose, throat, and skin; metallic taste in mouth, nausea ,metal fume fever.</p> <p>Chronic: only after six to ten years of exposure to iron dust or fumes does one present any signs of pneumoconiosis. Physical examinations of those exposed to iron dust have not indicated any disability. Excess inhalation of Chromium fumes has been associated with respiratory cancer.</p> <p>Excessive and prolonged inhalation to manganese(generally over 2 years exposure) can cause damage to the central nervous system. Specifically, the pathology resembles Parkinson’s Disease.</p> <p>Carcinogenicity: Chromium, Cobalt-Chromium Alloys, and Nickel have been identified by the international Agency for Research on Cancer as potential cancer causing agents.</p> <p>Potential Environmental Effects : NA</p>

4.First Aid Measures

Routes of Exposure	First Aid Measures
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Eye contact	Flush well with running water to remove particulates and get medical attention.
Skin contact	Brush off excess dust. Wash area well with soap and water.
Inhalation	Remove to fresh air, if condition continues, consult physician.
Ingestion	Seek medical help if large quantities of material have been ingested.

5.Fire Fighting Measures

Suitable Extinguishing Media:	N/A
Unsuitable Extinguishing Media:	N/A
Particular Hazards:	See section3
Protective Equipment for Fire Fighters:	N/A

6.Accidental Release Measures

Containment Techniques: N/A
Spill/Leak Clean-up procedures and equipment Sweep up with mechanical means.
Evacuation Procedures N/A
Special Instructions N/A

7.Handling and Storage

Handling No special cares are requested. In case of spillage, sweep up, so as to avoid possible risk of slipping.
Storage Packed with sealed plastic bags, or paper boxes. (see attached file) No special precautions, keep the package and containers closed and stored in the ventilated room. Avoid the corrosive gases.

8.Exposure Control/Personal Protection

Ventilation	Local exhaust recommended while burning, grinding, and/or welding and airborne levels if metal oxides exceed applicable OSHA Standards.
Personal Protective Equipment: Respiratory Protection: if fumes, misting or dust conditions occurs and exceeds applicable OSHA Standards. Personal Protection: Respiratory: if fumes, misting or dust conditions occur and exceed applicable OSHA Standards, provide NIOSH approved air-supplied respirators.	

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Eye Protection	Recommend approved safety glasses when grinding, welding, etc.
Hand Protection	Gloves: As required. Other Clothing: As required.

9.Physical and Chemical Characteristics

Appearance and Odor	Wire, odorless solid with metallic luster.
Physical State:	Solid
Solubility in Water(20 °C):	Does not soluble
Solubility in Organic Solvent(20 °C):	Does not soluble
Melting Poing/Range:	2400F to 2800F
Boiling Point:	NA
Flash Point:	NA
Ignition Point:	NA
Vapor Pressure(20 °C):	NIL
Density(20 °C):	7.5 to 8.5 specific gravity
PH Value (at 10g/1H zO):	NA
Viscosity (20 °C)	Solid

10.Stability and Reactivity

Stability? <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Unstable	Conditions to Avoid N/A
Hazardous Decomposition Products: Metal fumes and certain noxious gases, such as CO, may be produced during welding or burning operations.	
Hazardous Polymerization? <input type="checkbox"/> May Occur <input checked="" type="checkbox"/> Will not Occur	Conditions to Avoid N/A

11.Toxicological Information

No toxic effect would be expected from exposure to the solid form of Steel products. Prolonged, repeated exposure to fumes or dust generated during subsequent operations may or may cause adverse health effects associated with the listed constituents in excess of OSHA permissible exposure limits. This material contains nickel, which for some individuals, could result in development of nickel sensitization. This material should not be used for individuals with a known nickel sensitivity and should be discontinued for individuals whom develop nickel sensitization after prolonged contact.

12.Ecological Information

Biodegradability: N/D
Biodaccummulation: N/D
Follow the local regulation for non-hazardous metallic materials.

13.Disposal Considerations

Regulations:
Dump in accordance with local regulations.

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Properties(Physical/Chemical) Affecting Disposal NA
Follow instructions under points6 and 12.

14.Transport Information
Technical Shipping Name: Not regulated
Freight Class Bulk: N/A
Freight Class Package: N/A
Hazard Class or Division: Non-Hazardous
Further Details: Product is not considered dangerous for transport.

15.Regulatory Information
European Community: assigned to Class II a by Medical Device Directive 93/42 EEC
U.S.A : assigned to Class I Medical Devices by U.S. Food and Drug Administration(FDA)
Label information follow the EN980: 2008 «Symbols for use in the labelling of medical devices»

16.Other Information
<p>This information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. Therefore, it should not be construed as guaranteeing specific properties.</p> <p>The information in this MSDS is based on technical data that we believe to be reliable. Astar assumes no responsibility and makes no warranties, expressed or implied, regarding the accuracy or currency of any data so provided. Since conditions of storage, use, and disposal of this products are beyond our control, we make no warranties, expressed or implied, and assume no liability in connection with the use of this product.</p>
<p>Attention:</p> <ol style="list-style-type: none"> 1. The product should be sterilized before used. 75% alcohol is recommended. 2. There should be no change on the color and the shape of the products after sterilization, as well as no impact to the treatment. 3. Disposable only. 4. For professional use only. 5. Single use to the correspondent tooth only. Please follow the advice on the product label. Mixed or wrongly placement of the tubes might lead to unexpected problem in clinic . 6. This product contains nickel and chromium. If patient reaction is suspected, contact a physician.
<p>N/A=not applicable NA= not available N/D= not determined mg/m³= milligrams per cubic meter C = ceiling PEL = permissible exposure limit</p>