As of Aprl 1, 2021

## Products Name: Steel bars for Concrete Reinforcement and Rolled Steels

## SAFETY DATA SHEET

1. Products and	Products					
Company Information		Steel bars for	r concrete reinforcement and Rolled stee	ls		
	Applicable standards					
		1) JIS				
		JIS G3101	Rolled steels for general structure	SS		
		JIS G3106	Rolled steels for welded structure	SM		
		JIS G3114	Hot-rolled atmospheric corrosion			
			resisting steels for welded structure	SMA		
		JIS G3129	High tensile strength steel for tower			
			structural purposes	SH		
		JIS G3136	Rolled steels for building structure	SN		
		JIS G3112	Steel bars for concrete reinforcement	SD		
			4 <b>1</b> 1			
		2) JFE-BS Standards				
	High-tensile strength steel for towar atmosfer a purpose $i a \in \mathbf{HT}_{200M}$					
	for tower structural purposes 1.e.: HT 39000					
		3) Steel sect	ions flats and bars under application of st	andards		
	equivalent to those given in 1) and 2) in individual co					
		associations	bodies, and customers	,		
		ASTM Sta	ndards.			
		BS(-EN) S	tandards			
		Classificati	on Societies Standards			
	(NK,ABS,LRS,DNV(Old DNV-GL),BV,KR,CCS)					
		Standards of associations and bodies, other than those liste				
		above				
		Standards of	of individual users			
		4) Steels und	der no standard application			
		<i></i>				
	Company Info	Distriction	Shanas Componition			
		JFE Bars &	Shapes Corporation			
		Soction in al	11-5, Simuasin, Minato-Ku, Tokyo			
		Tel: 03-5777	1.2822			
		$F_{ax} \cdot 03-577$	7_3805			
		In emergenci	es :same address			
		in emergener				

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2. Composition /	Single or Mixture: Mixture						
Information on							
Ingredients	Information on ingredients						
	Ingredient	Concentration	CAS No.	ICSC No.	Class		
	Manganes (Mn)	e 0 - 10	7439-96-5	0174	L		
	Chromium (Cr)	n 0-10	7440-47-3	0029	L		
	Molybden m (Mo)	u 0-10	7439-98-7		L		
	Nickel (Ni	0 - 10	7440-02-0	0062	L		
	Iron (Fe)	Balance	7439-89-6				
	<ul> <li>Class: Mark "" represents "Outside of regulation".</li> <li>Mark "L" represents "Substance regulated by the Industrial Safety and Health Law".</li> <li>Mark "P" represents "Substance regulated by the PRTR Law".</li> <li>Concentration of each ingredient varies within the respective ranges given in the table with the applicable standard and product grade. In addition to the given major ingredients, the products may contain trace amounts of carbon [C], silicon [Si], phosphorous [P], sulfur [S], copper [Cu] and vanadium [V].</li> </ul>						
	titanium[Ti], ca	lcium[Ca], niobium[N	Nb], boron[B],ar	nd lead[Pb].			
3. Hazards and Toxicity Information	[Most significant hazard and toxicity] Under normal environments, there is no significant information on danger or toxicity. [Specific hazard and toxicity] However, fumes generated during welding and fusing and fine particles generated during grinding may irritate respiratory organs and mucosae of eyes and other parts of a human body.						
4. First Aid Measures	<ul> <li>After having first aid, the patient shall see medical doctor if necessary.</li> <li>Examples of first aid measures are given below.</li> <li>In case a person develops difficulty in breathing after inhalation of fumes or other hazardous substances, use respiration support, and promptly call for medical aid.</li> <li>In case a person is burned during or after welding or fusing work, cool the affected part and call for medical aid if needed.</li> <li>In case fumes, fine particles, or foreign matter enters the eyes, wash the eyes with water, and promptly call for medical aid.</li> <li>In case the skin is damaged by sharp edge, shavings, or other sharp debris of the product, keep the wound clean, and call for medical aid if needed.</li> </ul>						
5. Fire Fighting Measures	The products are inflammable under normal environments. Fine powder of the products, however, may lead to abrupt combustion with oxygen. In such a case, a chemical fire extinguisher must be used.						
6. Accidental Release Measures	The products are in the solid phase under normal environments, and are not released.						

7. Precautions on	[Handling]
Handling and Storage	- [Technological measures]: Under normal environments, the products are not hazardous, so they are not subject to technical measures on handling and storage
	<ul> <li>and storage.</li> <li>[Precautions]: During works such as welding, fusing, grinding, and machining, care should be taken to avoid inhalation of fumes and other hazardous substances, to avoid suffering irritation of mucosae, and to avoid injury by arcing, shavings, and other sharp debris. If necessary, local ventilation, total ventilation, dust-preventive and dust-collective measures, heat-shielding, fire proof measures, and other effective preventive measures shall be taken.</li> <li>[Precautions for safe handling]: Since the products are heavy, care should be taken to prevent falling down, rolling, collapse of a stack, and dropping of products. Sharp edges, shavings, and sharp debris of products may damage the skin. For banded products, care should be taken during cutting the bundle hoops/wires because the cut edges of the hoops/wires may spring up.</li> </ul>
	<ul> <li>[Storage]</li> <li>- [Technological measures]: Under normal environment, the product are not hazardous and toxic, so the storage of product does not need any application of technological measures.</li> </ul>
	<ul> <li>[Chemical substances that shall not be mixed with] and [Storage conditions]: Avoid exposing the products to water, acid, and high temperature and humidity.</li> </ul>
	<ul> <li>[Packaging materials for container]: Under normal environment, the products are not hazardous or toxic, so they are normally bare bundles.</li> </ul>
8. Exposure Control and Personal Protection	At present, under environment of general use, no significant information is available relating to exposure control and personal protection measures.
	[Protective gears]: For the works such as welding, fusing, grinding, and machining, adequate protective gear is needed, such as mask, goggles, gloves, and clothes to prevent inhalation of fumes and other hazardous substances, to prevent irritation of mucosae, and to protect contact with arcing sparks and shavings. It is preferable to wear a helmet and safety-shoes to reduce the shock of collision with a heavy product.
9. Physical and Chemical Properties	[Physical properties]: Under normal environments, the products are solid in a bar or shape. [Physical properties]: Melting point: 1,400°C or above Density: 7.85 g/cm <sup>3</sup>
10. Stability and Reactivity	[Stability] Under normal environments, the products are stable. [Reactivity] On contact with water or an oxidizing substance, the products may initiate an oxidation reaction, leading to lack of oxygen or generating hydrogen.
11. Toxicological Information	As steels, there is no significant epidemiological information such as "acute toxicity" and "local effect", at present.
12. Information on Environmental Influences	At present, there is no significant information on environmental influences.
13. Precautions on Disposal	In principle, disposal of the products shall be done by an authorized waste treatment contractor with legal licenses.

	If some part of the products attaches to the packaging material, the packaging material shall also be treated as the product category.
14. Precautions on Transportation	[Information relating to international regulations] There is no law or regulation on transportation that specifies the iron and steel products as dangerous chemical substances. Nevertheless, care shall be taken to avoid collapse of a stack because the products are heavy. Furthermore, the products should preferably be covered with sheeting to prevent wetting with rain or other water.
15. Applicable Laws and Regulations	The Industrial Safety and Health Law
16. Other Information	<ul> <li>[Reference Literature]</li> <li>"Reasons for Recommendation of Allowable Concentrations" (edited by the Japan Society for Occupational Health)</li> <li>"International Chemical Safety Cards: Japanese Edition" (supervised by the Environmental Health Bureau of the Ministry of Health and Welfare)</li> <li>The Safety Data Sheet (SDS) was prepared on the basis of materials and information available at present. This SDS is intended only as reference to assure safe handling of the products, and does not guarantee the safety of the products. Hazardous situations that are not described in the SDS and that are not identified by JFE Bars &amp; Shapes Corporation may exist. Therefore, individuals that receive the SDS information must exercise their own judgment in determining the appropriateness for a particular purpose with their own responsibility and after sufficient education and adequate measures, while referring to the SDS.</li> </ul>