

SAFETY DATA SHEET

Other means of identification Synonyms Nicke Powe Recommended use of the chemical and re Recommended Use Nicke Uses advised against Nicke Details of the supplier of the safety data s Manufacturer Address 23661 Birtcher Dr., Lake Forest, CA 92630 U Emergency telephone number	COMPA el Alloy Powe der, Alloy Powe der, Alloy 62 estrictions d el alloy produ sheet J.S.A. ntrec: 1- (94 2. HAZA he 2012 OSH	ANY/UN der der - Alloy 5B Powde on use uct manuf 49) 407-89	10 Powder er, Alloy 720 acture. 04 ENTIFICA	KING , Alloy 230 Powder, A	Powder, /	Alloy 230B Powder, Allo	Powder, Alle	
Product Name Nicke Other means of identification Nicke Synonyms Nicke Synonyms Nicke Recommended use of the chemical and recommended Use Nicke Ses advised against Nicke Details of the supplier of the safety data se Nicke Anufacturer Address Nicke 3661 Birtcher Dr., Lake Forest, CA 92630 U Emergency telephone number Emergency Telephone Cher Classification Cher Skin sensitization Carcinogenicity Specific target organ toxicity (repeated expo Chronic aquatic toxicity abel elements Applied toxicity	el Alloy Powe der, Alloy 62 estrictions of el alloy produ sheet J.S.A. ntrec: 1- (94 2. HAZA de 2012 OSH	der - Alloy 5B Powde on use uct manuf 9) 407-89	er, Alloy 720 acture. 04 ENTIFIC	Powder, A	Alloy 725 F	Powder, Alla	oy 718 Pow	
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hronic aquatic toxicity	sure)				Categ			
abel elements					Categ			
					Catego	ory 3		
anger								
anger	Er	mergency	Overview	1.1.1	1.1			· · ·
azard statements ay cause an allergic skin reaction uspected of causing cancer	÷.,					1.		. * *
auses damage to the respiratory tract throu armful to aquatic life with long lasting effec	ugh pròlònge ts	ed or repe	ated exposu	ure if inhale	ed			:
	:	1	:		1	1	:	÷.,
	1			÷.,				
ppearance Powder	P						Odor	

NICKEL ANOY	Powder	11.	· · · ·	:*:		÷.	:*:	Revision	Date 05-	Aug-2016
	v Statements - Prev		• •							1
	until all safety preca protective equipmen e gloves			d and und	lerstood					
void breathing void release t	g dust/fume to the environment	. [.	:	11		:	11		:**	
skin irritation	nated clothing befor occurs: Get medica clothing should not Vash with plenty of s	al advice/att be allowed	out of the v	workplace).	··.	:"		н,	:*:
	/ Statements - Disp ntents/container to a		waste disp	oosal plan	it :		1			
lazards not o lot applicable	otherwise classifie	d (HNOC)								
Other Informa When product eat-generating	<u>ition</u> is subjected to welc g processes, the fol	llowing pote	entially haza	ardous air	borne particle	es and/or f	fumes m	ay be gener	ated: Titani	
	o 2B carcinogen, He compounds such as						asal, and	l/or sinus ca	ancer, Solut	ble
	3.	СОМРО	SITION/I	NFORM		I INGRE		S	1 - 1 1 - 1	
ynonyms			l Alloy Pow er, Alloy 62		y 10 Powder,					
			,,,	.56 i 0wu	er, Alloy 720 F	Powder, A	10y 725	Powder, Al		vaer.
	Chemical Name	8	;]		CAS No.	Powder, A		W	eight-%	vder.
	Chemical Name Nickel Titanium	8				Powder, A		W		
	Nickel Titanium Chromium	e			CAS No. 7440-02-0 7440-32-6 7440-47-3	Powder, A		W	eight-% 19->99 0 - 45 8-22	
	Nickel Titanium Chromium Iron	B			CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6	Powder, A		W	eight-% 49->99 0 - 45 8-22 0-19	
	Nickel Titanium Chromium Iron Molybdenum	e '			CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7	Powaer, A			eight-% 49->99 0 - 45 8-22 0-19 0 - 10	
	Nickel Titanium Chromium Iron Molybdenum Tungsten	e			CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7440-33-7			W	eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10	
	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum				CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7			2	eight-% 49->99 0 - 45 8-22 0-19 0 - 10	
	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum Niobium (Columbiu Tantalum				CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7440-33-7 7429-90-5 7440-03-1 7440-25-7	Powaer, A			eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10 0 - 10 0 - 5.5 0 - 4.2 0 - 3.5	
	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum Niobium (Columbiu				CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7439-98-7 7440-33-7 7429-90-5 7440-03-1				eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10 0 - 10 0 - 5.5 0 - 4.2	
	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum Niobium (Columbiu Tantalum				CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7440-33-7 7440-33-7 7429-90-5 7440-03-1 7440-25-7 7440-58-6				eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10 0 - 10 0 - 5.5 0 - 4.2 0 - 3.5	
First aid meas	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum Niobium (Columbiu Tantalum Hafnium				CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7440-33-7 7429-90-5 7440-03-1 7440-25-7				eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10 0 - 10 0 - 5.5 0 - 4.2 0 - 3.5	
	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum Niobium (Columbiu Tantalum Hafnium	um)	4. FIR	ST AID	CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7440-33-7 7440-33-7 7429-90-5 7440-03-1 7440-25-7 7440-58-6	ES			eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10 0 - 5.5 0 - 4.2 0 - 3.5 0-1	
ye contact	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum Niobium (Columbiu Tantalum Hafnium	um) In the foreign	4. FIR	ST AID rticles cor	CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7440-33-7 7429-90-5 7440-03-1 7440-25-7 7440-58-6 MEASURE	ES t with eye	es during	processing	eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10 0 - 5.5 0 - 4.2 0 - 3.5 0-1	ith any
ye contact	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum Niobium (Columbiu Tantalum Hafnium	In the foreign In the soap a	4. FIR case of pa n object. case of ski and plenty	rticles cor n irritatior of water. unts of sr	CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7440-33-7 7440-33-7 7440-03-1 7440-03-1 7440-25-7 7440-58-6 MEASURI	ES et with eye eactions se	es during ee a phy	w 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10 0 - 5.5 0 - 4.2 0 - 3.5 0-1 , treat as with h off immed	ith any
ye contact kin Contact	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum Niobium (Columbiu Tantalum Hafnium	In the foreign In the soap a If exce to fres	4. FIR case of pa n object. case of ski and plenty essive amo	rticles cor n irritatior of water. unts of sr onsult a c	CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7440-33-7 7429-90-5 7440-03-1 7440-25-7 7440-25-7 7440-58-6 MEASURI ming in contaction n or allergic results	ES et with eye eactions se r particula h professi	es during ee a phy nte are in onal.	w 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10 0 - 5.5 0 - 4.2 0 - 3.5 0-1 , treat as with h off immediated as the second sec	ith any liately with g, remove
First aid meas Eye contact Skin Contact nhalation ngestion <u>Aost importar</u>	Nickel Titanium Chromium Iron Molybdenum Tungsten Aluminum Niobium (Columbiu Tantalum Hafnium	In the foreign In the soap a If exce to fres IF SW	4. FIR	rticles cor n irritatior of water. unts of sr onsult a c D. Call a P	CAS No. 7440-02-0 7440-32-6 7440-47-3 7439-89-6 7439-98-7 7440-33-7 7429-90-5 7440-03-1 7440-25-7 7440-25-7 7440-58-6 MEASURI MEASURI non allergic re noke, fume, of qualified health POISON CENT	ES et with eye eactions se r particula h professi	es during ee a phy nte are in onal.	w 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	eight-% 49->99 0 - 45 8-22 0-19 0 - 10 0 - 10 0 - 5.5 0 - 4.2 0 - 3.5 0-1 , treat as with h off immediated as the second sec	ith any liately with g, remove

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Note to physicians	Treat symptomatically.				
	5. FIRE-FIGHTING	MEASURES			
uitable extinguishing media					
mother with salt (NaCl) or class	D dry powder fire extinguisher.	11			
Unsuitable extinguishing m	edia Do not spray water on burning characteristic is caused by the	g metal as an explosic e hydrogen and stear	n may occur. Thi generated by the	s explosive reaction of v	vater with
	the burning material.				· :
nay ignite spontaneously at room rocesses of this product may for	ne chemical lice area material resulting from grind litemperature. WARNING: Fine parti m combustible dust-air mixtures. Ke liccumulations to minimize combustib	ticles resulting from gr eep particles away fror	inding, buffing, po	lishing, or sin	nilar
Hazardous combustion pro	ductsTitanium dioxide an IARC Gro cause lung, nasal, and/or sinu molybdenum trioxide may cau	us cancer, Soluble mo			n VI) ma
<u>Explosion data</u> Sensitivity to Mechanical In Sensitivity to Static Dischar			11 - 14 1		1
rotective equipment and preca s in any fire, wear self-contained all protective gear.	autions for firefighters I breathing apparatus pressure-dem	and, MSHA/NIOSH a	pproved (or equiv	alent) respira	tor and
	6. ACCIDENTAL RELE	ASE MEASURES	5		
Personal precautions, protectiv	e equipment and emergency proc	cedures_	ere 11.		:*:
Personal precautions	Use personal protective equip	ment as required.			
For emergency responders	Use personal protective equip				
or emergency responders	Guide No. 171, EXCEPT for F	-IRE follow Emergenc	y Response Guide		
	Guide No. 171, EXCEPT for F	FIRE follow Emergenc	y Response Guide		
Environmental precautions	Guide No. 171, EXCEPT for F				14. 14.
Environmental precautions Environmental precautions	Collect spillage to prevent rele				···
Environmental precautions Environmental precautions Methods and material for conta	Collect spillage to prevent rele	ease to the environme		;;;; ;;;	199 199
Environmental precautions Environmental precautions Methods and material for conta Methods for containment	Collect spillage to prevent rele	ease to the environme illage if safe to do so.	nt.	 	··· ···
Environmental precautions Environmental precautions <u>Methods and material for conta</u> Methods for containment	Collect spillage to prevent rele <u>inment and cleaning up</u> Prevent further leakage or spil	ease to the environme illage if safe to do so. o dry containers. Avoid	nt.	 	99 202 99
Environmental precautions Environmental precautions Methods and material for conta Methods for containment Methods for cleaning up	Collect spillage to prevent rele <u>inment and cleaning up</u> Prevent further leakage or spil Sweep or shovel material into	ease to the environme illage if safe to do so. o dry containers. Avoid	nt.	 	
Environmental precautions Environmental precautions Methods and material for conta	Collect spillage to prevent rele <u>inment and cleaning up</u> Prevent further leakage or spil Sweep or shovel material into	ease to the environme illage if safe to do so. o dry containers. Avoid D STORAGE naterial resulting from y ignite spontaneously	rt. creating uncontro grinding, buffing, j at room temperat	olled dust.	NG: Fine

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		other	sources	of ignition (i.e	e., pilot light	s, electric m	otors and	d static electric	city).	
ncompatible	e materials	Disso 200°0	lves in hy C, reacts	/drofluoric ac exothermical	id. Ignites ir	the presen	ce of fluc lorine, br	orine. When he omine, haloca	eated ab arbons, c	ove arbon
				arbon tetrafl						1
	8.	EXPOSU	RE CO	NTROLS/	PERSON	AL PROT	ECTIO	N		
			· · · ·	111			111		11	: * :
control para	meters									
1.1	Chemical Name	1.1			ACGIH TLV			OSHA	PEL	
	Nickel			TWA: 1.5 r	ng/m³ inhalat	ole fraction	,	TWA: 1	mg/m³	
	7440-02-0 Titanium				_			-		
	7440-32-6									
	Chromium 7440-47-3		: •	T	NA: 0.5 mg/m	1 ³		TWA: 1	mg/m³	· : .
1	Iron	1			-			-		
	7439-89-6									
	Tungsten 7440-33-7		. :		g/m³ STEL: 1 g/m³ TWA: 5		(vacate	d) STEL: 10 mg 10 mg/i		ited) STE
	Molybdenum			TWA: 10 n	ng/m ³ inhalab	le fraction				
	7439-98-7			TWA: 3 mg	g/m ³ respirab	le fraction	_			
	Aluminum 7429-90-5			IWA: 1 m	g/m³ respirab	le fraction	тv	TWA: 15 mg/n VA: 5 mg/m ³ re		
	Niobium (Columbiun	n)			-					dottori
	7440-03-1							7)4/4 - 5		
	Tantalum 7440-25-7				-			TWA: 5	mg/m³	
	Hafnium 7440-58-6		: '	TWA: 0.5 m	g/m³ TWA: 0.	5 mg/m³ Hf		TWA: 0.5	mg/m ³	11
		1.1		1.1						
ingineering	Controls	Avoid	generati	on of uncont	rolled partici	es.				
	Controls otection measures,		•			es.			1 1	
ndividual pr		<mark>such as p</mark> Wher exam	ersonal airborne ple, tight-	protective e particles ma	quipment ay be preser es, foam-line	it, appropria	te eye pr sses or c	rotection is rec	commen e equipn	ded. Fo nent tha
ndividual pr Eye/face	otection measures,	<u>such as p</u> Wher exam shield	ersonal airborne ple, tight- l the eyes	protective e particles ma fitting goggle from particl	quipment ay be preser es, foam-line es.	nt, appropria nd safety gla	sses or c	otection is rec other protectiv uring hot work	e equipn	nent tha
ndividual pr Eye/face Skin and	otection measures, protection	such as p Wher exam shield Fire/fl Wher	ersonal airborne ple, tight- l the eyes ame resis	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g	quipment ay be preser es, foam-line es. nt clothing n ases are gei	nt, appropria od safety gla nay be appr nerated and	sses or o opriate d if exposi	other protectiv uring hot work ure limits are e	e equipn	e produc
Eye/face Skin and	otection measures, protection body protection	such as p Wher exam shield Fire/fl Wher irritati	ersonal a airborne ple, tight- l the eyes ame resi ame resi o particula on is exp	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g erienced, pro	quipment ay be preser es, foam-line es. nt clothing n ases are get oper approve	nt, appropria ad safety gla hay be appr herated and ed respirato	sses or o opriate d if exposi y protec	other protectiv uring hot work ure limits are e tion should be	e equipn with the exceeded worn.	nent tha produc d or
ndividual pr Eye/face Skin and	otection measures, protection body protection	such as p Wher exam shield Fire/fl Wher irritati Positi	ersonal a airborne ple, tight- l the eyes ame resi ame resi on particula on is exp ve-pressi	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g erienced, pro ure supplied	quipment ay be preser es, foam-line es. nt clothing n ases are ger oper approve air respirato	nt, appropria ad safety gla hay be appr herated and ed respirato rs may be ro	sses or c opriate d if exposi y protec equired fo	other protectiv uring hot work ure limits are e tion should be or high airborr	e equipn with the exceeded worn. ne contai	nent tha produc d or minat
ndividual pr Eye/face Skin and	otection measures, protection body protection	such as p Wher exam shield Fire/fl Wher irritati Positi conce	ersonal a airborne ple, tight- l the eyes ame resi a particula on is exp ve-press entrations	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g erienced, pro ure supplied	quipment ay be preser es, foam-line es. nt clothing n ases are ger oper approve air respirato	nt, appropria ad safety gla hay be appr herated and ed respirato rs may be ro	sses or c opriate d if exposi y protec equired fo	other protectiv uring hot work ure limits are e tion should be	e equipn with the exceeded worn. ne contai	nent tha produc d or minat
ndividual pr Eye/face Skin and	otection measures, protection body protection	such as p Wher exam shield Fire/fl Wher irritati Positi conce regula	ersonal a airborne ple, tight- l the eyes ame resi a particula on is exp ve-press entrations ations.	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g erienced, pro ure supplied . Respiratory	quipment ay be preser es, foam-line es. nt clothing n ases are ger oper approve air respirato protection n	nt, appropria ad safety gla may be appro- merated and ed respirato rs may be ro must be pro	sses or c opriate d if exposi y protec equired fo vided in a	other protectiv uring hot work ure limits are e tion should be or high airborr accordance w	e equipn with the exceeded worn. ne contai	nent tha produc d or minat
ndividual pr Eye/face Skin and Respirato	otection measures, protection body protection	such as p Wher exam shield Fire/fl Wher irritati Positi conce regula	ersonal a airborne ple, tight- l the eyes ame resi a particula on is exp ve-press entrations ations.	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g erienced, pro ure supplied	quipment ay be preser es, foam-line es. nt clothing n ases are ger oper approve air respirato protection n	nt, appropria ad safety gla may be appro- merated and ed respirato rs may be ro must be pro	sses or c opriate d if exposi y protec equired fo vided in a	other protectiv uring hot work ure limits are e tion should be or high airborr accordance w	e equipn with the exceeded worn. ne contai	nent tha produc d or minat
ndividual pr Eye/face Skin and Respirato	otection measures, protection body protection ory protection	such as p Wher exam shield Fire/fl Wher irritati Positi conce regula	ersonal a airborne ple, tight- l the eyes ame resi a particula on is exp ve-press entrations ations. le in acco	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g erienced, pro ure supplied . Respiratory	quipment ay be preser es, foam-line es. nt clothing n ases are ger oper approve air respirato protection n good indust	nt, appropria ad safety gla nay be appro- nerated and ed respirato rs may be ro must be pro- rial hygiene	sses or c opriate d if expose y protec equired for vided in a and safe	other protectiv uring hot work ure limits are e tion should be or high airborr accordance w	e equipn with the exceeded worn. ne contai	nent tha produc d or minat
ndividual pr Eye/face Skin and Respirato	otection measures, protection body protection ory protection iene Considerations	such as p Wher exam shield Fire/fl Wher irritati Positi conce regula Hand	ersonal a airborne ple, tight- l the eyes ame resis on is exp ve-press entrations ations. le in acco	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g erienced, pro ure supplied . Respiratory ordance with AND CHE	quipment ay be preser es, foam-line es. nt clothing n ases are ger oper approve air respirato protection n good indust	nt, appropria ad safety gla nay be appro- nerated and ed respirato rs may be ro must be pro- rial hygiene	sses or c opriate d if expose y protec equired for vided in a and safe	other protectiv uring hot work ure limits are e tion should be or high airborr accordance w	e equipn with the exceeded worn. ne contai	nent tha produc d or minat
Eye/face Skin and Respirato	otection measures, protection body protection ory protection iene Considerations	such as p Wher exam shield Fire/fl Wher irritati Positi conce regula Hand 9. PHY	ersonal a airborne ple, tight- l the eyes ame resis on is exp ve-press entrations ations. le in acco	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g erienced, pro ure supplied . Respiratory ordance with AND CHE	quipment ay be preser es, foam-line es. nt clothing n ases are ger oper approve air respirato protection n good indust	nt, appropria ad safety gla may be appro- merated and ed respirato rs may be ro must be pro- rial hygiene ROPERT	sses or c opriate d if expose y protec equired for vided in a and safe	other protectiv uring hot work ure limits are e tion should be or high airborr accordance w	e equipn with the exceeded worn. ne contai	nent tha produc d or minat
Adividual pro Eye/face Skin and Respirato General Hygi	otection measures, protection body protection ory protection iene Considerations	such as p Wher exam shield Fire/fl Wher irritati Positi conce regula Hand 9. PHY	ersonal a airborne ple, tight- l the eyes ame resis on articula on is exp ve-press entrations ations. le in acco <u>'SICAL</u> al prope	protective e particles ma fitting goggle from particl stant/retarda ates/fumes/g erienced, pro ure supplied . Respiratory ordance with AND CHE	quipment ay be preser es, foam-line es. nt clothing n ases are ger oper approve air respirato protection n good indust	nt, appropria ad safety gla hay be appro- nerated and ed respirator rs may be ro must be pro- rial hygiene ROPERT	sses or c opriate d if expose y protec equired for vided in a and safe	other protectiv uring hot work ure limits are e tion should be or high airborr accordance w	e equipn c with the exceeded e worn. ne contai ith curren	nent tha produc d or minat
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North America; English

Nickel	Alloy	Powder	1
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	Melting point/freezing point Boiling point / boiling range Flash point	1320-14 - -	00 °C /	2560-280	0°F	 		1.11			:•:
	Evaporation rate Flammability (solid, gas)	-			.1.	Not applicab Not flammat distributed, f	le in th Iammat	ole as finel	/ divided par	rticles or	. : .
	Flammability Limit in Air					pieces result Not applicab		n processii	ng of this pro	oduct	
	Upper flammability limit: Lower flammability limit: Vapor pressure		÷1,		÷.	Not applicab		``.	÷1,	:*:	
	Vapor density Specific Gravity Water solubility Solubility in other solvents	- 8.0-8.5 Insolubl		1	1.1	Not applicab	`:				
	Partition coefficient Autoignition temperature Decomposition temperature	-				Not applicab Not applicab Not applicab	le le				
	Kinematic viscosity Dynamic viscosity Explosive properties	- Not app				Not applicab Not applicab	le				
: • :	Oxidizing properties	Not app	licable	:*:		14. 1	:*:	÷	ні, 1	:*:	11.
	Other Information Softening point	· . <u>-</u>								·:	• . :
	Molecular weight VOC Content (%) Density	- Not app -	licable				ı			,	
· : .	Bulk density		:	11.		:	·			11.	
		10	. STAB	ILITY A	ND REA	ACTIVITY					
	Reactivity Not applicable	÷.	Ч.	:*:	1		:*:	11.	Н.	:*:	÷.
	Chemical stability Stable under normal conditions.			1		1 1 1 1	`:				
	Possibility of Hazardous Reaction None under normal processing.	<u>S</u>									
	Hazardous polymerization	Hazardo	ous polyr	nerization o		occur.					
	Conditions to avoid Dust formation and dust accumulation	on.	.÷.		÷.	÷.,	:*:		· · · .	:*:	
	Incompatible materials Dissolves in hydrofluoric acid. Ignite following: Chlorine, bromine, halocar							s exotherm	nically with th	ne	:•:
	Hazardous Decomposition Product When product is subjected to weldin heat-generating processes, the follow an IARC Group 2B carcinogen. Hexa molybdenum compounds such as m	g, burning, wing potent avalent Chr	ially haz omium (ardous airt Chromium	orne par VI) may o	ticles and/or fun cause lung, nas	nes ma	y be gener	ated. Titaniu		
		11. 1	OXICO	DLOGICA	AL INFO	ORMATION		1 1 1 1 1			
	Information on likely routes of exp	osure_									
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				Page	5 / 10			North A	nerica; Englis	sh	

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Nickel Alloy	rowaer						···.		Revisio	on Date 05-A	uy-20
Product Inform	nation										
Inhalation				ected of cau				amage t	o the resp	iratory tract thr	ough
Eye conta	ct _; .	· : :	Produ	uct not class	ified.					:**	· : :
Skin Conta	act		May c	cause sensit	tization by	y skin conta	act.				
Ingestion		:*:	Produ	uct not class	ified.	÷.	А,	:*:		- 1.	:*:
Chemical Name	•			Oral LD50			Dermal LD50			Inhalation LC5)
Nickel 7440-02-0			> 90	000 mg/kg bw	/ ·:	1.1			1.1	> 10.2 mg/L	
Titanium 7440-32-6			> 50	000 mg/kg bw	/		-			-	
Chromium 7440-47-3			> 34	400 mg/kg bw	/		-			> 5.41 mg/L	
Iron 7439-89-6	:	· : :	98,6	600 mg/kg bw	/		-;	11		> 0.25 mg/L	
Tungsten 7440-33-7			> 20	000 mg/kg bw	1	> ;	2000 mg/kg bv	v		> 5.4 mg/L	
Molybdenum 7439-98-7		: • :	> 20	000 mg/kg bw	/ :·:	>	2000 mg/kg bv	v		> 5.10 mg/L	
Aluminum 7429-90-5			15,9	900 mg/kg bw	I		-			> 1 mg/L	
Niobium (Columi 7440-03-1	bium)	1	> 10,	,000 mg/kg b	w	>	2000 mg/kg bv	v :		- · ·	
Tantalum 7440-25-7			> 20	000 mg/kg bw	/	> ;	2000 mg/kg bv	V		> 5.18 mg/L	
Hafnium			> 5(000 mg/kg bw	/		-			>4.3mg/L	
7440-58-6				· · · · ·			· I			·_···	
Symptoms <u>Delayed and in</u> Acute toxicity		effects	as well as	cause sensit <u>chronic eff</u> uct not class	ects from			exposu	ire_	н. П	
Skin corrosion Serious eye da Sensitization Germ cell mut	n/irritation amage/eye agenicity		ion Produ May c Produ	uct not class uct not class cause sensif uct not class	ified. ified. tization by	y skin conta		:			;
Carcinogenici	-	11	1	uct not class				11		1	
Chemical Name Nickel	•	-	ACGIH	<u> </u>	IAI Gro			NTP Known		OSHA X	
7440-02-0		: : :		.:	Grou	р 2В	Reasona		ipated	~	: 1:
Chromium 7440-47-3					Gro	up 3					
Reproductive STOT - single	exposure		Produ Cause	uct not class uct not class es disorder uct not class	ified. and dama	age to the:	Respiratory	System.		· · · · ·	
				: • •				1			
		14	1	12. ECOL	OGICA	L INFOR	MATION			•	
Aspiration haz			1		OGICA	L INFOR	MATION		····		
STOT - repeat Aspiration has <u>Ecotoxicity</u> This product as	zard	s classif	1	12. ECOL	:*:		MATION				

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Revision Date 05-Aug-2016

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Nickel 7440-02-0	NOEC/EC10 values range from 12.3 µg/l for Scenedesmus accuminatus	The 96h LC50s values range from 0.4 mg Ni/L for Pimephales promelas to 320	The 30 min EC50 of nickel for activated sludge was 33	The 48h LC50s values rang from 0.013 mg Ni/L for Ceriodaphnia dubia to 497
	to 425 µg/l for Pseudokirchneriella subcapitata.	mg Ni/L for Brachydanio rerio.		mg Ni/L for Daphnia magn
Titanium 7440-32-6	The 72 h EC50 of titanium dioxide to Pseudokirchnerella subcapitata was 61 mg of	The 96 h LC50 of titanium dioxide to Cyprinodon variegatus was greater than 10,000 mg of TiO2/L.	The 3 h EC50 of titanium dioxide for activated sludge were greater than 1000 mg/L.	The 48 h EC50 of titaniun dioxide to Daphnia Magna was greater than 1000 mg TiO2/L.
	TiO2/L.	The 96 h LC50 of titanium dioxide to Pimephales promelas was greater than		
Chromium 7440-47-3	-	1,000 mg of TiO2/L . -	-	-
Iron 7439-89-6		The 96 h LC50 of 50% iron oxide black in water to Danio rerio was greater than 10,000 mg/L.	The 3 h EC50 of iron oxide for activated sludge was greater than 10,000 mg/L.	The 48 h EC50 of iron oxic to Daphnia magna was greater than 100 mg/L.
Tungsten 7440-33-7	The 72 h EC50 of sodium tungstate to Pseudokirchnerella subcapitata was 31.0 mg of W/L.	The 96 h LC50 of sodium tungstate to Danio rerio was greater than 106 mg of W/L.	The 30 min EC50 of sodium tungstate for activated sludge were greater than 1000 mg/L.	The 48 h EC50 of sodium tungstate to Daphnia magr was greater than 96 mg o W/L.
Molybdenum 7439-98-7	The 72 h EC50 of sodium molybdate dihydrate to Pseudokirchneriella subcapitata was 362.9 mg of Mo/L.	The 96 h LC50 of sodium molybdate dihydrate to Pimephales promelas was 644.2 mg/L	The 3 h EC50 of molybdenum trioxide for activated sludge was 820 mg/L.	The 48 h LC50 of sodium molybdate dihydrate to Ceriodaphnia dubia was 1,015 mg/L. The 48 h LC50 of sodium molybdate dihydrate to
· · · · · · · · · · · · · · · · · · ·		The 96 h LC50 of aluminum		Daphnia magna was great than 1,727.8 mg/L The 48-hr LC50 for
Aluminum 7429-90-5	The 96-h EC50 values for reduction of biomass of Pseudokirchneriella subcapitata in AAP-Medium at pH 6, 7, and 8 were estimated as 20.1, 5.4, and	to Oncorhynchus mykiss was 7.4 mg of Al/L at pH 6.5 and 14.6 mg of Al/L at pH 7.5	- 4	Ceriodaphnia dubia expose to Aluminium chloride increased from 0.72 to greater than 99.6 mg/L wit water hardness increasing
	150.6 µg/L, respectively, for dissolved Al.			from 25 to 200 mg/L.
Niobium (Columbium) 7440-03-1	-	-	-	-
Tantalum 7440-25-7 Hafnium	- The 72 h EC50 of hafnium	- The 96 h LC50 of Hafnium	-	The 48 h EC50 of Hafniur
7440-58-6	to Pseudokirchneriella subcapitata was great than 8 ug of Hf/L (100% saturated	dioxide in water to Danio rerio was greater than the solubility limit of 0.007 mg		dioxide to Daphnia magna was greater than the solubility limit of 0.007 mg
	solution).	Hf/L	<u> </u>	Hf/L.
ersistence and degrada	ability	: 9 :8	tt a sa	
ther adverse effects	an an ar	т	an ar ar	an ai
	13. DIS	POSAL CONSIDERA		
aste treatment method	<u> s</u>	. ee 9. T		

Nickel Alloy Powder Revision Date 05-Aug-2016 regulations. Disposal should be in accordance with applicable regional, national and local laws and Contaminated packaging regulations. **RCRA - D Series Wastes Chemical Name** 5.0 mg/L regulatory level Chromium 7440-47-3 This product contains one or more substances that are listed with the State of California as a hazardous waste. **14. TRANSPORT INFORMATION** DOT Regulated per 49 CFR, if quantity with particles smaller than 100 micrometers (0.004 inches) in an individual package equals or exceeds the reportable quantity (RQ) of 5000 pounds of chromium, 5000 pounds of copper, or 100 pounds of nickel Proper shipping name UN/ID No. 3077 Environmentally hazardous substance, solid, n.o.s. (nickel alloy powder), RQ **Hazard Class** g ш **Packing Group Special Provisions** 8, 146, 335, A112, B54, B120, B8, IP3, N20, N91, T1, TP33 Guide No. 171, Except for FIRE follow Guide No. 170 **Emergency Response Guide** Number **15. REGULATORY INFORMATION** International Inventories Complies TSCA DSL/NDSL Complies **EINECS/ELINCS** Complies Complies ENCS IECSC Complies KECL Complies PICCS Complies Complies AICS Legend: TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances **ENCS** - Japan Existing and New Chemical Substances IECSC - China Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances PICCS - Philippines Inventory of Chemicals and Chemical Substances AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name		CAS No.			Weight-%		SARA 31	3 - Threshold	d Values %
Nickel - 7440-02-0		7440-02-0	.;		49->99	.;		0.1	.;
Chromium - 7440-47-3		7440-47-3			8-22			1.0	
SARA 311/312 Hazard Categorie Acute health hazard Chronic Health Hazard	<u>es</u>	4.	:*:	Yes Yes	4.	:*:		Н.	:*:
Fire hazard Sudden release of pressure	hazard			No No	· ·		:-:		

Reactive Hazard

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nickel		Х	Х	
7440-02-0				
Chromium		X	X 1	1
7440-47-3				

No

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

	Chemical Name			Haz	ardous Substances R	Qs]
 	Nickel 7440-02-0	: • •	· .	: * *	100 lb	: * *	
	Chromium 7440-47-3				5000 lb		

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Nickel - 7440-02-0	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name		New Jersey		м	assachusett	s	Pennsylvania			
Nickel 7440-02-0	: • :	x			×		1	X		
Titanium 7440-32-6		Х								
Chromium 7440-47-3	1	X			X		1.1	X		
Tungsten 7440-33-7		Х			Х			Х		
Molybdenum 7439-98-7		Х			Х			Х		
Aluminum 7429-90-5		X			X			X		
Tantalum 7440-25-7		Х			Х			Х		
Hafnium 7440-58-6	:*:	 X	:*:		X	:*:		x	:*:	

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

;	<u>NFPA</u>		Health haz	zards 1	Flar	nmability	0	Instability	/ 0·:	 sical and C perties -	Chemical	
	<u>HMIS</u> Chronic Hazard Star L	.eger	Health ha	zards 2* * = Chronic		nmability Hazard	1	Physical	hazards	ional prote	ection X	
:	Issue Date Revision Date Revision Note			28-May-20 05-Aug-20						··.		

Updated Section(s): 1, 2, 3, 14 Note:

The information provided in this safety data sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Unless specified in the text

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			nformation			y data shee	ts and lat		le at samate					
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