

SAFETY DATA SHEET

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SEC	CTION	1. ID	ENT	IFICA								
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Produ	uct Name:											
CAS	#: 12060-0	00-3	· .	1	1.1	1.		1.1	· .		1.1	1.
Relev	vant ident	ified us	ses of t	he subs	stance: S	Scientif	fic resear	rch and	develo	opment		
Supp	lier detail	s:										
Stanfo	ord Advan	ced Ma	iterials		: • •	·			·			·
E-mai	il: sales@s	samate	rials.co	m								
	949) 407-8							1	11		1	14
Addre	ess: 23661	Rintcha	ar Dr I	aka Ear	ract CA (226301	JSA					
			51 D1., L									
	CTION			<u>'</u>		i i	1					
SEC	1	2. H	AZAI	RDSI	DENT	TIFIC	ΑΤΙΟΙ	N ^{en}	1		;	1
SEC Class	CTION	2. H	AZA I	RDS I	DEN1 ure	ſIFIC		N - 211 111		'		
SEC Class GHS	CTION	2. H f the sul tion in a	AZAI bstance accorda	RDS I e or mixt nce with	DEN1 ure 29 CFR	ſIFIC		N - 211 111		'		
SEC Class GHS Acute	CTION ification of Classificat toxicity, C	2. H f the sul tion in a Dral (Ca	AZAI bstance accorda ategory	RDS I e or mixt nce with 4), H302	DENT ure 29 CFR	TIFIC 1910 (ATION OSHA HO	N (**** ****				
SEC Class GHS Acute Acute	CTION ification of Classificat toxicity, C	2. H f the sul tion in a Dral (Ca nhalatic	AZA bstance accorda ategory on (Cate	RDS I e or mixt nce with 4), H302 egory 4),	DENT ure 29 CFR	TIFIC 1910 (N (**** ****				
SEC Class GHS Acute Acute Carcii	CTION ification of Classificat toxicity, C toxicity, Ir nogenicity	2. H f the sul tion in a Dral (Ca nhalatic (Categ	AZAI bstance accorda ategory on (Cate lory 1B)	RDS I e or mixt nce with 4), H302 egory 4),	DENT ure 29 CFR 2 H332	TIFIC 1910 (ATION OSHA HO	N :::: 				
SEC Class GHS Acute Acute Carcin Repro	CTION ification of Classificat toxicity, C toxicity, Ir nogenicity oductive to	2. H f the sul tion in a Dral (Ca nhalatio (Categ oxicity (C	AZAI bstance accorda ategory on (Cate ory 1B) Categor	RDS I e or mixt nce with 4), H302 egory 4),), H350 ry 1A), H	DEN1 ure 29 CFR 2 H332	TIFIC 1910 (ATION OSHA HO	N				
SEC Class GHS Acute Acute Carcin Repro	CTION ification of Classificat toxicity, C toxicity, Ir nogenicity oductive to	2. H f the sul tion in a Dral (Ca nhalatic (Categ oxicity (Corgan to	AZAI bstance accorda ategory on (Cate ory 1B) Categor oxicity -	RDS I e or mixt nce with 4), H302 egory 4),), H350 ry 1A), H repeate	DENT ure 29 CFR 2 H332 I360 d exposu	TIFIC 1910 (ure (Cat	ATION OSHA HO	N				
SEC Class GHS Acute Acute Carcin Repro	CTION ification of Classificat toxicity, C toxicity, Ir nogenicity oductive to	2. H f the sul tion in a Dral (Ca nhalatic (Categ oxicity (Corgan to	AZAI bstance accorda ategory on (Cate ory 1B) Categor oxicity -	RDS I e or mixt nce with 4), H302 egory 4),), H350 ry 1A), H repeate	DENT ure 29 CFR 2 H332 I360 d exposu	TIFIC 1910 (ure (Cat	ATION OSHA HO	N				
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GHS Label elements, including precautionary statements	· .		1	1. 1.	
Pictogram					
Signal word Danger			'		1
Hazard statement(s)					
H302 + H332 Harmful if swallowed or if inhaled.	·			1	'
H350 May cause cancer.H360 May damage fertility or the unborn child	I. 14,		1	1. 1.	
H373 May cause damage to organs through prolonged or repeated		· .	*		
exposure.					
H410 Very toxic to aquatic life with long lasting effects.	·				
Precautionary statement(s)					
P201 Obtain special instructions before use.	1.		1.1	14	
P202 Do not handle until all safety precautions have been read and					
understood.					
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.	·			1	'
P264 Wash skin thoroughly after handling.					
P270 Do not eat, drink or smoke when using this product.	· · ·		1	· · .	
P271 Use only outdoors or in a well-ventilated area.		1			
P273 Avoid release to the environment.					
P280 Wear protective gloves/ protective clothing/ eye protection/ face	·		;**	1 1	'
protection.	· .	:	·		:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doct					
unwell. Rinse mouth.		1	'		1
P304 + P340 + P312 IF INHALED: Remove person to fresh air and kee	ep com	fortable			
for breathing. Call a POISON CENTER/doctor if you feel unwell.	·	¹	111	1	
P308 + P313 IF exposed or concerned: Get medical advice/ attention.	÷.,		1	÷.,	
P391 Collect spillage.					
P405 Store locked up.					
P501 Dispose of contents/ container to an approved waste disposal					
plant.				1 	
Hazards not otherwise classified (HNOC) or not covered by GHS - non	ie		1	1. 1.	

SECTION 3. CC	MPO	OSITIC) N/IN	IFOF	RMATI	ON C	ON IN	IGRE	DIEN	ΓS	
Formula : O3PbTi	і і 1		· · ·	1 - 1 1		'	н н н				
Molecular weight : 303.0)7 g/mc	bl									
CAS-No. : 12060-00-3	<u>'</u>	'		·			'			1.1	
EC-No. : 235-038-9	·			· .		·	·		·		
Index-No. : 082-001-00-											
					<u></u>						
SECTION 4. FIF	RST		EAS	URE	S				;**		
Description of first aid m	easure	es	·			·	1.		1	1. 1.	
General advice											
Consult a physician. Sho										ł	
dangerous area.	·			·	'		·			·	
If inhaled											
If breathed in, move per	son inte	o fresh air	. If not	breathi	ng, give a	rtificial	respira	tion.	1	1	
Consult a physician.			1	н н 1		'			'	н н н	
In case of skin contact											
Wash off with soap and	plenty	of water.	Consult	t a phys	sician.		1	¹	; • •	1	
In case of eye contact	۰.	:	·	· .		·	· .	:	·	·	
Flush eyes with water as	s a preo			ı	I		,	,			
If swallowed			'	1 I			н н н				
Never give anything by r	mouth t	to an unco	onsciou	is perso	on. Rinse	mouth	with wa	ter. Cons	ult		
a physician.	1 		1.1.1				1 1			1 1	
Most important symptom and effects are describe					delayedTl	ne mos	t impor	tant know	n symp	toms	
2) and/or in section 11			1	н н 1	1	'			'		
Indication of any immed	iate me	edical atte	ntion a	nd spec	cial treatm	ent nee	eded				
No data available	'	'	111	1		: · ·	1		111	1	
					1						

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media		'	1	1	1. ¹		1		
Suitable extinguishing media									
Use water spray, alcohol-resist	ant foam,	dry ch	emical	or carbo	on dioxid	е.		111	1
Special hazards arising from th	e substar	ice or i	mixture		·	1. 1.		1	
Titanium/titanium oxides, Lead Advice for firefighters		'	н н 1	1: 	*		`:	*	
Wear self-contained breathing a	apparatus	s for fire	efightin	g if nece	essary.	·			·
Further information									
No data available		·	1.		1	14		1.0	142

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipm	ient an	d emer	gency pi	rocedure	S			
Use personal protective equipment. Avo	id dust	format	ion. Avo	id breath	ing vap	ours, mi	st	
or gas. Ensure adequate ventilation. Eva	acuate	person	nel to sa	ife areas	. Avoid	breathin	g	
dust.								
For personal protection see section 8.		1. j. j.	1. ¹	111	1	¹	111	1
Environmental precautions	·	1	1	5	· .	:	1	
Prevent further leakage or spillage if safe								
Discharge into the environment must be	avoide	ed.				1	¹	
Methods and materials for containment a	and cle	eaning u	qu					
Pick up and arrange disposal without cre	eating	dust. Sv	weep up	and sho	vel. Ke	ep in	111	1
suitable, closed containers for disposal.	1	1. 1.	1	5	1. 1.	-	1	
Reference to other sections								
For disposal see section 13.		,	1		,	:		

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling					
				1	1
Avoid contact with skin and eyes. Avoid formation of de	ust and aeros	ols.Fu	ther p	rocessing	9
of solid materials may result in the formation of combu	stible dusts.	The pot	ential	for	'
combustible dust formation should be taken into considered and the second secon					•
Provide appropriate exhaust ventilation at places when	e dust is forn	ned.			1
For precautions see section 2.			1		
Conditions for safe storage, including any incompatibili					
Keep container tightly closed in a dry and well-ventilate	ed place.				
Keep in a dry place.					
Storage class (TRGS 510): 6.1D. Non-combustible, ac	ute toxic Cat	3 / toxi	c haza	irdous	1
materials or hazardous materials causing chronic effect	sts				
Specific end use(s)					
Apart from the uses mentioned in section 1 no other sp	ecific uses a	re stipu	lated		
 The second s second second se second second sec second second sec					1
SECTION 8. EXPOSURE CONTRO					
SECTION OF EAR OCOUL COULTA	LS/PER	SON	AL		
PROTECTION	LS/PER	SON	AL	:	'
PROTECTION	LS/PER				
PROTECTION Appropriate engineering controls		•			
PROTECTION Appropriate engineering controls Handle in accordance with good industrial hygiene and		•			
PROTECTION Appropriate engineering controls Handle in accordance with good industrial hygiene and before breaks and at the end of workday.	l safety pract	ice. Wa	sh hai	nds	'
PROTECTION Appropriate engineering controls Handle in accordance with good industrial hygiene and before breaks and at the end of workday. Personal protective equipment	l safety pract	ice. Wa	sh hai	nds	'
PROTECTION Appropriate engineering controls Handle in accordance with good industrial hygiene and before breaks and at the end of workday. Personal protective equipment Eye/face protection	l safety pract	ice. Wa	sh hai	nds	
PROTECTION Appropriate engineering controls Handle in accordance with good industrial hygiene and before breaks and at the end of workday. Personal protective equipment Eye/face protection Safety glasses with side-shields conforming to EN166	l safety pract Use equipme	ice. Wa	sh hai	nds	
PROTECTION Appropriate engineering controls Handle in accordance with good industrial hygiene and before breaks and at the end of workday. Personal protective equipment Eye/face protection Safety glasses with side-shields conforming to EN166 protection tested and approved under appropriate gove	l safety pract Use equipme	ice. Wa	sh hai	nds	
PROTECTION Appropriate engineering controls Handle in accordance with good industrial hygiene and before breaks and at the end of workday. Personal protective equipment Eye/face protection Safety glasses with side-shields conforming to EN166 protection tested and approved under appropriate gove NIOSH (US) or EN 166(EU).	l safety pract Use equipme	ice. Wa ent for e dards s	sh hai ye uch as	nds	
PROTECTION Appropriate engineering controls Handle in accordance with good industrial hygiene and before breaks and at the end of workday. Personal protective equipment Eye/face protection Safety glasses with side-shields conforming to EN166 protection tested and approved under appropriate gove NIOSH (US) or EN 166(EU). Skin protection	l safety pract Use equipme ernment stan	ice. Wa	sh hai ye uch as	nds	
PROTECTION Appropriate engineering controls Handle in accordance with good industrial hygiene and before breaks and at the end of workday. Personal protective equipment Eye/face protection Safety glasses with side-shields conforming to EN166 protection tested and approved under appropriate gove NIOSH (US) or EN 166(EU).	l safety pract Use equipme ernment stan use. Use pro	ice. Wa ent for e dards s per glo	sh hai ye uch as	nds	

with this product. Dispose of contaminated gloves after use in accordance with

applicable laws and good laboratory pra	ctices.	Wash a	nd dry h	ands.	1.		5	÷.,	
Body Protection									
Complete suit protecting against chemic	als, Th	e type o	of protect	ive equi	pment	must	· · · ·		
be selected according to the concentration	on and	amoun	t of the c	langeroi					
at the specific workplace.		1 			· · ·				
Respiratory protection	1			1	1. 1.		1	1. 1.	
Where risk assessment shows air-purify	ing res	oirators	are app	ropriate	use a f	ullface			
particle respirator type N100 (US) or typ	e P3 (E	N 143)	respirate	or cartric	lges as	i			
a backup to engineering controls. If the	respirat	or is the	e sole me	eans of	protecti	on,		·	
use a full-face supplied air respirator. Us	se respi	rators a	and comp	onents	tested	and			
approved under appropriate governmen	t standa	ards su	ch as NI	OSH (U	S) or Cl	ΞN	1	1.	
(EU).	'								· .
Control of environmental exposure									
Prevent further leakage or spillage if saf	e to do	so, Do	not let p	roduct e	nter dra	ains.	111	·	'
Discharge into the environment must be	avoide	d.						1	
								<u> </u>	
							¹		
SECTION 9. PHYSICAL A		CHEN	MICAI	_ PR(JPE	RIES			
Information on basic physical and chem	ical pro	perties							
a) Appearance Form: powder					1			1.1	'
	·	·							
Colour: beige				5	` .	1	5 1	1. 1.	
Colour: beige b) Odour No data available				5	` .	1	5 1	1. 1.	
b) Odour No data available c) Odour Threshold No data available	*	 							
b) Odour No data available	*	 							
b) Odour No data available c) Odour Threshold No data available	* :**								
b) Odour No data available c) Odour Threshold No data available d) pH No data available									
 b) Odour No data available c) Odour Threshold No data available d) pH No data available e) Melting point/freezing point 									
 b) Odour No data available c) Odour Threshold No data available d) pH No data available e) Melting point/freezing point Melting point/freezing point: ca.1,756 °C 	; (ca.3,1	l93 °F) availab	- OECD						
 b) Odour No data available c) Odour Threshold No data available d) pH No data available e) Melting point/freezing point Melting point/freezing point: ca.1,756 °C Test Guideline 102 	; (ca.3,1	l93 °F) availab	- OECD						
 b) Odour No data available c) Odour Threshold No data available d) pH No data available e) Melting point/freezing point Melting point/freezing point: ca.1,756 °C Test Guideline 102 f) Initial boiling point and boiling range N 	; (ca.3,1	193 °F) availab	- OECD						

i) Flammability (solid, ga	as) No d	lata availa	able	·		·	·		·		
j) Upper/lower flammab	ility or e	xplosive li	imits N		available						
k) Vapour pressure No	data ava	ailable	· · '			'			1. ¹		1
I) Vapour density No da	ta availa	able									
m) Relative density 7.52	2 g/cm3	at 25 °C ((77 °F)	'	'		·				
n) Water solubility 0.000	008,g/I a	t 25 °C (7	7 ^{°,} °F) -	insolu	ble	·	1. 1.		1.1	14	
o) Partition coefficient: r available	n-octanc	ol/water N	o data	availat	olep) Auto	-ignitio	n tempe	erature N	o data		
q) Decomposition tempo	erature	No data a									
r) Viscosity No data ava	ilable	· · · [·]		'			<u>'</u>			1.1	
s) Explosive properties	No data	available) '			1	1. 1.	1	5	1. 1.	
t) Oxidizing properties N	lo data	available						· .			
Other safety information	ו	i						i			
No data available	і т. т.		1 1 1 1	1. 1.		1 - 1 - 1 1	1		:	1	
	·		·	۰.		·	1.		·	1. 1.	
SECTION 10. S											
Reactivity		:		,	:			:			
No data available	·			·			·			·	
Chemical stability											
Stable under recommer	nded sto	rage cond	ditions.	· · ·		1	÷.,		1		
Possibility of hazardous	reactio	ns		1 I 1		¹					1
No data available											
Conditions to avoid	'	'			¹	: * *	1		111	1.1	
No data available	• .	;	·	· .		·			·		:
Incompatible materials											
Strong oxidizing agents				, , ,		¹					1
Hazardous decompositi	-										
Hazardous decompositi	on prod	ucts form	ed und	er fire	conditions	s Tita	nium/tit	anium	111	1.1	
oxides, Lead oxides	·		·	۰.		1	÷.,		1	1. 1.	

SECTION 11. TOXICOLOGICAL INFORMATION Information on toxicological effects Acute toxicity LD50 Oral - Rat -> 12,000 mg/kg Inhalation: No data available Dermal: No data available No data available Skin corrosion/irritation No data available Serious eye damage/eye irritation No data available Gern cell mutagenicity No data available Carcinogenicity IARC: 2A - Group 2A: Probably carcinogenic to humans (Lead titanium trioxide) NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. Reproductive toxicant Known human reproductive toxicant	FORMATION 44	Other decomposition products - In the event of fire: see section						· .				
Information on toxicological effects Acute toxicity LD50 Oral - Rat - > 12,000 mg/kg Inhalation: No data available Dermal: No data available No data available Skin corrosion/irritation No data available Serious eye damage/eye irritation No data available Respiratory or skin sensitisation No data available Germ cell mutagenicity No data available Carcinogenicity IARC: 2A - Group 2A: Probably carcinogenic to humans (Lead titanium trioxide) NTP: No component of this product present at levels greater than or equal to 0.1% is dentified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. Reproductive toxicity Presumed human reproductive toxicant Known human reproductive toxicant Scient Serie Carcinogen to this available	And A											
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Specific target organ toxicity - repeated exposure		Specific target organ toxicity - r	epeated e	xposu	re		1	14. 14.		1	÷.,	

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

Additional Information

RTECS: Not available

Lead salts have been reported to cross the placenta and to induce embryo- and fetomortality. They also have teratogenic effect in some animal species. No teratogenic effects have been reported with exposure to organometallic lead compounds. Adverse effects of lead on human reproduction, embryonic and fetal development, and postnatal (e.g., mental) development have been reported. Excessive exposure can affect blood, nervous, and digestive systems. The synthesis of hemoglobin is inhibited and results in anemia. If left untreated, neuromuscular dysfunction, possible paralysis, and encephalopathy can result. Additional symptoms of overexposure include: joint and muscle pain, weakness of the extensor muscles (frequently the hand and wrist), headache, dizziness, abdominal pain, diarrhea, constipation, nausea, vomiting, blue line on the gums, insomnia, and metallic taste. High body levels produce increased cerebrospinal pressure, brain damage, and stupor leading to coma and often death. Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

SECTION 12. ECOLOGICAL INFORMATION

Toxicity										
No data available	'		·	· · · ¹		1 				'
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Results of PBT a	and vPvB a	assessment	·	1. 1.		1	1. 1.		1	14	
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disposal.						,					
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Further informati	ion			· · · *		1	¹			¹		
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or > 5kg for solid	ls.	14. 14.	-	1	1. 1.		1	1. 1.	-	1	1. 1.	
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Section 302.				· · · [*]			· · · '					
SARA 313 Com										- 4		
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313.												
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SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.