

SA	FETY DATA SH				111		Revision D Print D	Version 6.4 ate 02/07/2023 ate 07/31/2023
SEC	TION 1: Identification	of the substa	ance/mi	ixture and	of the	comp	any/und	lertaking
1.1	Product identifiers					11		
	Product name	Eead(1	[I) zirc	onate	·	.:		5
	CAS-No.	: 12060-0)1-4					
	:				1 1 1 1			
1.2	Relevant identified u	ses of the su	bstance	e or mixtu	re and	uses	advised a	igainst
	Identified uses	: Laborato	ory chem	icals, Synth	nesis of	subșta	anceș	
1.3	Details of the suppli	er of the safe	ty data	sheet	·			
	Company	: Stanford Address : 2 Lake Forest	Advance 3661 Bir , CA 926	ed Materials tcher Dr., 530 U.S.A.	5		·	
					: ' '			
	Telephone Fax	: (949)40 : (949)81)7-8904 .2-6690					
1.4	Emergency telephon	e	1.1	:		1	1	
	Emergency Phone #	: (949) 40 (This teleph week.)	17-8904 10ne num	nber is avai	lable 24	1 hour	s per day,	7 days per
SEC	TION 2: Hazards ident	ification						

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302 Acute toxicity, Inhalation (Category 4), H332 Carcinogenicity (Category 1B), H350 Reproductive toxicity (Category 1A), H360 Specific target organ toxicity - repeated exposure (Category 2), H373 Short-term (acute) aquatic hazard (Category 1), H400 Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

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14	Pictogram		
.:	Signal Word		Danger i i i i i i i i i i i i i i i i i i i
	Hazard statem H302 + H332 H350 H360 H373	nent(s)	Harmful if swallowed or if inhaled. May cause cancer. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated
1. 1.	H410		exposure. Very toxic to aquatic life with long lasting effects.
	Precautionary P201 P202 P260 P264 P270 P271 P273	statement(s	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment
$\mathcal{D}_{\mathcal{A}}$	P280		Wear protective gloves/ protective clothing/ eye protection/ face
1	P301 + P312 - P304 + P340 -	+ P330 + P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
н н н	P308 + P313 P391 P405 P501	н н н. 	IF exposed or concerned: Get medical advice/ attention. Collect spillage. Store locked up. Dispose of contents/ container to an approved waste disposal
14			plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3. Composition/information on ingredients

			SILIUI	i/ iiii0		igieui	ents				
3	3.1	Substances									
		Formula		· · •	O₃PbŹr						
		Molecular weigh	nt	:	346.42 g/mc	bl					
		CAS-No.		. :	12060-01-4						
<u>'</u> .		EC-No.	· ·	:	235-039-4	· .		1	· .		
		Index-No.		:	082-001-00-	6					
.:		Component		н н ц	the second second		Clas	sification		 Concentra	tion
		Lead zirconat	_								

Leac	l zircona	ate						
			1 1 1	;	1 - 1 1	Acute Tox. 4; Carc. 1B; Repr. 1A; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H332,	<= 100 %	
i.	i.					H350, H360, H373, H400, H410 Concentration limits:	:	1.
	1			·			Page 2 of	11

;		· · ·		· · .	>= 2.5 %: Repr. 2,		1
					H361f; >= 0.5 %: STOT		
					RE 2, H373;		
	1.0		 1	. 1	M-Factor - Aquatic Acute:	1.00	1.1
					10		

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Unsuitable extinguishing media For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture Zirconium oxides

Lead oxides

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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SEC	TION 6:	Accid	lental r	release i	neasure	S						
6.1	Person Advice 1 Ensure consult For pers	for no adequ an ex sonal	ecaution on-emer uate ver pert. protecti	ons, prot gency pentilation.	ersonnel: Evacuate ection 8.	equipmo Avoid in the da	ent and on the second s	emerger of dusts. a, observe	ncy pro Avoid e emerg	cedures substance gency pro	e contact ocedures,	•
6.2	Enviro Do not	nmen let pro	ital pre	caution nter drain	s 15.	1.1						
6.3	Method Cover d (see see Avoid g	ls an Irains. ctions enera	d mate Collect 7 and tion of	t, bind, a 10). Take dusts.	r contain nd pump e up care	o ment a off spill fully. Di	nd clear s. Observ spose of	hing up ve possib properly.	le mate Clean i	rial restri up affecte	ictions ed area.	, i'
6.4	Refere	ncet	o othe	r section	IS							
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SEC	TION 7:	Hand	lling an	nd stora	ge :		1 1 1 1					. .;
7.1	Precau	tions	for sa	fe handl	ing							
	Advice Work u	on sa nder h	afe har nood. D	n dling o not inh	ale subst	ance/m	ixture.				· · ·	
;	Hygien Immedi and fac For pred	e me ately e afte cautio	change change r workin ns see	contami ng with s section 2	nated clo ubstance .2.	othing. A	opply prev	ventive s	kin prot	ection. W	Vash hanc	ls
7.2	Conditi	ions f	for _: safe	e storag	e, includ	ling_any	y incomp	oatibiliti	es			
	C1			_		,						
	Storag Tightly only to Storag	e con closed qualif e clas	ditions d. Dry. l îed or a ss	s Keep in a authorized	i well-ver d persons	ntilated s.	place. Ke	ep locked	d up or	in an are	a accessi	ble
	Storag Tightly only to Storage compou	e con closed qualif e class class inds v	ditions d. Dry. I fied or a ss (TRGS which ca	s Keep in a nuthorized 510): 6 nusing ch	i well-ver d persons 1C: Com ronic effe	ntilated 5. Ibustible ects	place. Ke	ep locked oxic Cat.	d up or 3 / toxic	in an are	a accessil Inds or	ble
7.3	Storag Tightly only to Storage compou Specifi Apart fr	e con closed qualif e class class inds v c end rom th	ditions d. Dry. I fied or a ss (TRGS which ca l use(s ne uses	s Keep in a authorized 510): 6 ausing ch) mentione	a well-ver d persons 1C: Com ronic effe ed in sect	ntilated s. bustible ects tion 1.2	place. Ke	ep locked oxic Cat. specific	d up or 3 / toxic uses are	in an are compou	a accessi inds or	ble
7.3	Storag Tightly only to Storage compou Specifi Apart fr	e con closec qualif e class class inds v c end rom th	ditions d. Dry. I fied or a ss (TRGS which ca l use(s ne uses	s Keep in a authorized 510): 6 ausing ch) mentione	a well-ver d persons 1C: Com ronic effe ed in sect	ntilated s. bustible ects tion 1.2	place. Ke e, acute to no other	ep locked	d up or 3 / toxic uses are	in an are compou e stipulat	a accessi Inds or red	ble
7.3 SEC 8.1	Storag Tightly only to Storage compou Specifi Apart fr TION 8: Contro	e con qualif e class class inds v c end com th Expo I para	ditions d. Dry. I fied or a ss (TRGS which ca l use(s ne uses sure co ameter	S Keep in a nuthorized 510): 6. Susing ch mentione for the second	a well-ver d persons 1C: Com ronic effe ed in sect persona	ibustible ects tion 1.2	place. Ke	ep locked	d up or 3 / toxic uses are	in an are compou	a accessi inds or ed	ble
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Component		CAS-No.	Value		Control parameters	Basis
 Lead zirconate	. : '	12060-01- 4	TWA		5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
			TWA		5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
1 1 1 1 1 1		Remarks	Not clas	ssifia	able as a human	carcinogen
			STEL		10 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
			Not clas	ssifia	able as a human	carcinogen
			TWA		0.05 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
			Confirm humans	ned a s	animal carcinoge	en with unknown relevance to
			PEL		0.05 mg/m3	OSHA Specifically Regulated Chemicals/Carcinogens
 · · · · ·	1.1		OSHA s	peci	fically regulated	carcinogen
			TWA		5 mg/m3	USA. NIOSH Recommended Exposure Limits
	÷.;		ST		10 mg/m3	USA. NIOSH Recommended Exposure Limits
			TWA		0.05 mg/m3	USA. NIOSH Recommended Exposure Limits
			PEL		5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article
 	· ·		STEL		10 mg/m3	California permissible exposure
	••;	E				contaminants (Title 8, Article 107)
 :			PEL :		0.05 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

Biological occupational exposure limits

; '	Component	CAS-No.	Parameters	Value	Biological specimen	Basis
	Lead zirconate	12060-01- 4	Lead	200 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
• ;		Remarks	Not critical	111		

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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		Eye/fac Use equi governm	e prote pment f ient sta	for ey	n ve protection ls such as NI	tested OSH (l	and app JS) or EN	roved un I 166(EU)	der app). Safet	ropriate y glasses	;		
		Skin pro Handle w	otectio vith imp	n ervio	us gloves.								
	:::	This reco supplied	by us a	dation and fo	n applies only or the designa	/ to the ated us	e product se. When	stated in dissolvin	the sating in or	fety data mixing w	sheet, ith other		
·]	i.	contact t Internet:	the supp www.k	olier olier olier	of CE-approv	ed glov	ves (e.g.	KCL Gmb	0H, D-30	6124 Eich	nenzelĺ,		
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	:::	Splash co	ontact					:**	111	: • }	:**	14	
	E	Material: Minimum Break the Material	Nitrile Nayer t rough ti tested:	rubb hickr ime: KCL 7	er ness: 0.11 m 480 min 741 Dermatri	m				Н	·;*		
	111	Body Pr	otectio	n :	÷			1	.11		÷	.11	
•	E E	Our reco standard the used	mmend ls: DIN respira	ation EN 14 tory	s on filtering 43, DIN 1438 protection sy	respira 37 and stem.	atory pro other acc	tection a company	re base ing stan	d on the dards re	following lating to		
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5 9	ECTION .1 Inf a) b) c)	Control Do not le 1 9: Physic ormation Appearanc Odor Odor Thre	of envi et produ cal and on bas ce eshold	ironr ict en chei ic ph	mental expo iter drains. mical prope bysical and o Form: powd No data ava No data ava	osure rties chemic ler ilable ilable	cal prop	erties					
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	k)	Vapor pre	essure		No data av	ailable							
	^{: - (} 1)	Vapor de	nsity		No data av	ailable							
	m)	Density			No data av	ailable							
		Relative	density		No data av	ailable							
	n)	Water so	lubility		No data av	ailable							
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••; 	SECTION 11.	Toxicologi	cal inform	nation		1 1 1 1 1			H		<u></u>
-	1 1 Informa	tion on to			te						
	Acute to Acute tox (Expert ju Remarks: Acute tox	xicity estimated adgment) Classified cicity estimated	ate Oral - 5 according ate Inhalat	500.1 m to Regu ion - 4 l	ng/kg Ilation (h - 1.5 r	EU) 1272 mg/l - du	2/2008, A ist/mist	nnex VI	(Table 3	.1/3.2)	
	(Expert ju Remarks: Dermal: I	udgment) Classified No data ava	according	to Regu	Ilation (EU) 1272	2/2008, A	nnex VI	(Table 3	.1/3.2)	1. j
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	Serious o No data a Respirat	eye dama available cory or ski	ge/eye irı n sensitiz	ritation			:. <i>.</i>		ed.	: ' '	
	No data a Germ ce No data a	available Il mutage i available	nicity	· ; '		:			E		
	Carcinog	genicity 2A - Grou	ıp 2A: Prot	ably ca	rcinogei	nic to hu	mans (Le	ad zirco	nate)	1	.11
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֥;	the exten diarrhea,	isor muscle constipatio	mptoms of s (frequen on, nausea	overex tly the l , vomiti	posure i hand an ng, blue	d wrist), line on t	foint and headache the gums	mușcle e, diżzir , insom	pain, wea less, abdo nia, and r	akness of ominal pa netallic	in,
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···;	ta si T	aste. High bo tupor leading o the best of	ody lev g to co f our ki	els produce ma and ofte nowledge, t	e increa en deat the che	ased cere th. emical, p	ebrospina hysical,	al pressure and toxico	e, brair logical	n damage propertie	e, and es have no	ot	
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	12.6 E	ndocrine d lo data avail	isrupt i able	ing proper	ties								
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Proper shipping name: LEAD COMPOUND, SOLUBLE, N.O.S. (Lead zirconate) Marine pollutant : yes

ΙΑΤΑ

UN number: 2291 Class: 6.1 Packing group: III Proper shipping name: Lead compound, soluble, n.o.s. (Lead zirconate)

SECTION 15: Regulatory information		
SARA 302 Components This material does not contain any components with a	section 302 EHS	TPQ.
SARA 313 Components The following components are subject to reporting lever Section 313:	els established by	SARA Title III,
Lead zirconate	CAS-No. 12060-01-4	Revision Date 1993-04-24
SARA 311/312 Hazards Acute Health Hazard, Chronic Health Hazard		at at
Massachusetts Right To Know Components		
Lead zirconate	CAS-No. 12060-01-4	Revision Date 1993-04-24
Pennsylvania Right To Know Components		
Lead zirconate	LAS-No. 12060-01-4	1993-04-24
California Prop. 65 Components , which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.Lead zirconate	CAS-No. 12060-01-4	Revision Date 2007-09-28

SECTION 16: Other information

Further information

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. Stanford Advanced Materials shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Stanford Advanced Materials

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the

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