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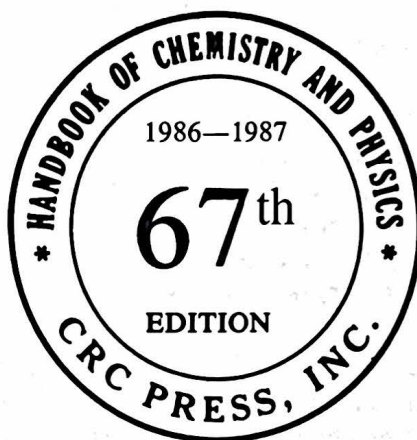
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A Ready-Reference Book of Chemical and Physical Data



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CRC Handbook

HANDBOOK OF ANTIBIOTIC COMPOUNDS
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Imperial Chemical Industries

HANDBOOK OF ANTIBIOTIC COMPOUNDS

A Ready-Reference Book of Chemical and Physical Data

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HANDBOOK OF ANTIBIOTIC COMPOUNDS

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PHYSICAL CONSTANTS OF INORGANIC COMPOUNDS

No.	Name	Synonyms and Formulae	Mol. wt.	Crystalline form, properties and index of refraction	Density or spec. gravity	Melting point, °C	Boiling point, °C	Solubility, in grams per 100 cc		
								Cold water	Hot water	Other solvents
a1	Actinium	Ac	227.0278	silv wh met. cub		1050	3200 ± 300	d to Ac(OH) ₃		
a2	bromide	AcBr ₃	466.74	wh. hex	5.85	subl 800		s		
a3	chloride, tri-	AcCl ₃	333.39	wh cr. hex	4.81	subl 960		i	i	
a4	fluoride, tri-	AcF ₃	284.02	wh cr. hex	7.88			i		
a5	hydroxide	Ac(OH) ₃	278.05	wh		subl 700—800		s		
a6	iodide	AcI ₃	607.74	wh				i		
a7	oxalate	Ac ₂ (C ₂ O ₄) ₃	718.11	wh cr. hex	9.19			i		
a8	oxide, sesqui-	Ac ₂ O ₃	502.05	dk. cub	6.75			i		
a9	sulfide, sesqui-	Ac ₂ S ₃	550.24			660.37	2467	i	i	s alk. HCl, H ₂ SO ₄ , conc HNO ₃ , h ac a
a10	Aluminum	Al	26.98154	silv wh duct met. cub	2.702			v sl s	d	
a11	acetate, tri-	Al(C ₂ H ₃ O ₂) ₃	204.12	wh solid		d 193, subl vac - H ₂ O	314	i	i	v s al; s eth. bz sl s a
a12	acetylacetonate	Al(C ₅ H ₇ O ₂) ₃	324.31	col. monocl	1.27			i	i	
a13	orthoarsenate	AlAsO ₄ ·8H ₂ O	310.02	wh powd	3.001			v sl s		
a14	benzoate	Al(C ₇ H ₅ O ₂) ₃	390.33	wh cr powd		59—60	283—284 ^{0.6}			
a15	benzoyloxide	Aluminum benzylate Al(C ₇ H ₇ O ₂) ₃	348.38					i		s hot HNO ₃ ; i a, alk
a16	boride	AlB ₁₂	156.70	dk red-blk. monocl	2.551 ⁸					
a17	boride, di-	AlB ₂	48.60	copper red. hex.	3.19			s	s	sl s a
a18	bromate	Al(BrO ₃) ₃ ·9H ₂ O	572.83	wh cr. hydr		62.3	d 100	s with viol	d	s al. acet, CS ₂
a19	bromide	AlBr ₃ (or Al ₂ Br ₆)	266.69	col. rhomb pl.	2.64 ¹⁰ (fused)	97.5	263.3 ⁷⁴⁷			s al. amyl al; sl s CS ₂
a20	bromide, hexahydrate	AlBr ₃ ·6H ₂ O	374.79	col-yelsh need. deliq	2.54	93	d 135	s	d	s al
a21	bromide, pentadecylhydrate	AlBr ₃ ·15H ₂ O	536.92	col need		-7.5	d 7	s	s	v s org solv
a22	butoxide, tert-	Al(C ₄ H ₉ O) ₃	246.33	wh cr.	1.0251 ¹⁰	subl 180, m.p. >300, sealed tube.				
a23	carbide	Al ₄ C ₃	143.96	yel-grn. hex.	2.36	stab to 1400	d 2200 ¹⁰⁰	d to CH ₄		d dil a; i acet
a24	chlorate	Al(ClO ₃) ₃ ·6H ₂ O	385.43	col. rhbdr. deliq		d		vs		s dil HCl
a25	perchlorate	Al(ClO ₄) ₃ ·6H ₂ O	433.43	col. hydr	2.020	82	-6H ₂ O. 178	s		
a26	chloride	AlCl ₃ (or Al ₂ Cl ₆)	133.34	wh to col. hex. odor HCl, v deliq	fus 2.44 ²⁵ liq 1.31 ²⁰⁰	190 ^{2.5} atm	d 262 182.7 ⁷⁵² subl. 177.8	69.9 ¹⁵ with viol	s d	100 ^{12.5} abs al; 0.072 ²⁵ chl; sCCl ₄ , eth sl s bz
a27	chloride, hexahydrate	AlCl ₃ ·6H ₂ O	241.43	col. rhomb. deliq. 1.6	2.398	d 100		s	v s ev HCl	50 abs al; s eth; sl s HCl
a28	chloride, hexammine	AlCl ₃ ·6NH ₃	235.52	col cr. hydr	1.412 ²⁵	d		s		
a29	diethylmalonate deriv	Al(C ₂ H ₅) ₃ O ₄	504.46		1.084 ¹⁰⁰	98		i		s org solv
a30	ethoxide	Al(C ₂ H ₅ O) ₃	162.16	wh cr.	1.142 ²⁰	134	205 ¹⁴	d	s	v sl s al, eth
a31	α-ethylacetoacetate deriv	Al(C ₆ H ₉ O ₃) ₃	414.39	wh cr.	1.101 ⁸⁰	78—79	190—200 ¹¹	s		s lgr
a32	ferrocyanide	Al ₄ [Fe(CN) ₆] ₃ ·17H ₂ O	1050.05	br powd				sl s	sl s	s dil a
a33	fluoride	AlF ₃	83.98	col. triclin	2.882 ²⁵	1291 subl ⁶⁰		0.559 ²⁵	s	i a, alk. al. acet
a34	fluoride	AlF ₃ ·3/2 H ₂ O	147.03	wh cr powd	1.914 ²⁵	-2H ₂ O 100	anhydr 250	i	sl s	d ac a
a35	fluoride, monohydrate	Nat. fluellite. AlF ₃ ·H ₂ O	101.99	col. rhomb. 1.473, 1.490, 1.511	2.17			sl s	sl s	
a36	fluosilicate	Nat. topaz. 2AlFO·SiO ₂	184.04	rhomb. 1.619, 1.620, 1.627	3.58			i	i	
a37	hydroxide	Nat. boehmite. AlO(OH)	59.99	wh. orthorhomb microcr.	3.01	-H ₂ O, trans to γ-Al ₂ O ₃		i	i	s h a, h alk
a38	hydroxide	Nat. diaspor. AlO(OH)	59.99	col. rhomb cr.	3.3—3.5	-H ₂ O, trans to Al ₂ O ₃		i	i	s h a, h alk
a39	hydroxide	Al(OH) ₃	78.00	wh. monoclin	2.42	-H ₂ O. 300		i	i	s a, alk; i al
a40	iodide	AlI ₃ (or Al ₂ I ₆)	407.70	br pl, cont free I ₂ , deliq	3.98 ²⁵	191	360	s d	s	s al. eth. CS ₂ , liq NH ₃
a41	iodide, hexahydrate	AlI ₃ ·6H ₂ O	515.79	wh-yel cr. hydr	2.63	d 185	3	v s	v s	s al. CS ₂
a42	isopropoxide	Al(C ₃ H ₇ O) ₃	204.25	wh cr.	1.0346 ²⁰	118.5	140.5 ⁸	d		s al, bz, chl
a43	lactate	Al(C ₃ H ₅ O ₃) ₃	294.19	wh-yelsh powd				v s		
a44	nitrate	Al(NO ₃) ₃ ·9H ₂ O	375.13	col. rhomb. deliq. 1.54		73.5	d 150	63.7 ²⁵	v s d	100 al; s alk. acet, HNO ₃ , a
a45	nitride	AlN	40.99	wh cr. hex	3.26	>2200 (in N ₂)	subl 2000	d (NH ₃)	d	d a, alk
a46	oleate (com'l)	Al(C ₁₈ H ₃₃ O ₂) ₃ (?)	871.36	wh powd, existence doubted except as basic salt				d	s	i al; v sl s bz
a47	oxalate	Al ₂ (C ₂ O ₄) ₃ ·4H ₂ O	390.08	wh powd				i	i	i al; s a
a48	oxide	Al ₂ O ₃	101.96	col. hex. 1.768, 1.760	3.965 ²⁵	2072	2980	i		v sl s a, alk
a49	oxide	α-Alumina, nat. corundum. Al ₂ O ₃	101.96	col. rhomb cr. 1.765	3.97	2015 ± 15	2980 ± 60	0.000098 ²⁹	i	v sl s a, alk
a50	oxide	γ-Alumina. Al ₂ O ₃	101.96	wh micr cr. 1.7	3.5—3.9	tr to α		i	i	sl s a, alk
a51	oxide, monohydrate	Al ₂ O ₃ ·H ₂ O	119.98	col. rhomb. 1.624 ± 0.003	3.014			i	i	
a52	oxide, trihydrate	Nat. gibbsite, hydraargillite. Al ₂ O ₃ ·3H ₂ O	156.01	wh monoclin cr. 1.577, 1.577, 1.595	2.42	tr to Al ₂ O ₃ ·H ₂ O (Boehmite)		i	i	s h a, alk

PHYSICAL CONSTANTS OF INORGANIC COMPOUNDS (continued)

No.	Name	Synonyms and Formulae	Mol. wt.	Crystalline form, properties and index of refraction	Density or spec. gravity	Melting point, °C	Boiling point, °C	Solubility, in grams per 100 cc		
								Cold water	Hot water	Other solvents
g73	fluoride, di-	GeF ₂	110.59	wh cr, hydr		d > 350	subl	s	v s	
g74	fluoride, tetra-	GeF ₄	148.58	col gas or liq, not liq at atm press	2.46 ³⁶ 5	subl -37		d to GeO + H ₂ GeF ₆		
g75	fluoride, tetra-	GeF ₄ ·3H ₂ O	202.63	wh cr, deliq		d		s	s	
g76	hydride	Digermane. Ge ₂ H ₆	151.23	liq	1.98-100	-109	29; d 215	d		s liq NH ₃
g77	hydride	Trigermane. Ge ₃ H ₈	225.84	col liq	2.2 ³⁰	-105.6	110.5; d 195	i	i	s CCl ₄
g78	hydride, tetra-	Germane. GeH ₄	76.62	col gas	1.523-142	-165	-88.5; d 350	i	i	s liq NH ₃ , NaOCl; sl s h HCl
g79	imide	Ge(NH) ₂	102.62	wh amorph powd		d 150			d to NH ₃ + GeO ₂	
g80	iodide, di-	GeI ₂	326.40	or hex pl	5.37	d	subl vac 240	s	s d	s conc HI, dil a; sl s CCl ₄ , chl; i CS ₂ , CCl ₄ , bz, MeOH
g81	iodide, tetra-	GeI ₄	580.21	red-or, cub	4.322 ²⁶	144	d 440	s d		d al, acet; s CS ₂ , CCl ₄ , bz, MeOH
g82	(tri-) nitride, di-	Ge ₃ N ₂	245.78	blk cr			subl 650			i a, alk
g83	(tri-) nitride, tetra-	Ge ₃ N ₄	273.80	wh-lt brn powd	5.25 ²⁵	d 450		i	i	sl s NaOH; i HCl
g84	oxide, d-(insoluble)	GeO ₂	104.59	tetr	6.239	1086 ± 5		i		s a, alk; i HCl, HF; one form NaOH, NH ₄ OH; one form s Cl ₂ water, H ₂ O ₂ + NH ₄ OH; i a, alk
g85	oxide, di-(soluble)	GeO ₂	104.59	col, hex, 1.650	4.228 ²⁵	1115.0 ± 4		0.447 ²⁵	1.07 ¹⁰⁰	v sl s a; sl s alk s alk, alk sulf; i al, eth, a; 3.112 liq NH ₃
g86	oxide, mono-	GeO	88.59	blk cr powd, 1.607		subl 710		i	i	s HCl, alk or alk sulf; sl s NH ₄ OH; 0.0473 liq NH ₃
g87	oxychloride	GeOCl ₂	159.50	col liq		-56	d > 20	d	d	i all solv
g88	selenide	GeSe ₂	230.51	orange, rhomb(?)	4.56 ²⁵	707 ± 3	d	i	i	v sl s a; sl s alk
g89	sulfide, di-	GeS ₂	136.71	wh powd, or wh, orthorhomb	2.94 ¹⁴	ca 800	subl > 600	0.45 d	d to GeO ₂ + H ₂ S	s alk, alk sulf; i al, eth, a; 3.112 liq NH ₃
g90	sulfide, mono-	GeS	104.65	yel-red amorph, or rhomb bipyram, blk	amorph: 3.31 rhomb: 4.01	530	subl 430	0.24	i	s HCl, alk or alk sulf; sl s NH ₄ OH; 0.0473 liq NH ₃
g91	Glucinum	See Beryllium								
g91	Gold	Au	196.9665	yel duct met, cub, coll blue-viol	19.31	1064.43	3080	i	i	s aq reg, KCN, h H ₂ SO ₄ ; i a d a; s NaCN
g92	(I) bromide	AuBr	276.87	yel-gray mass, or cr powd	7.9	d 115		i	i	s eth, al
g93	(III) bromide	AuBr ₃	436.68	gray powd, or br cr		97.5-Br, 160		sl s		s HCl, HBr
g94	(I) chloride	AuCl	232.42	yel cr	7.4	170 d to AuCl ₃	d 289.5	v sl s d	d	s al, eth; sl s NH ₃ ; i CS ₂
g95	(III) chloride	AuCl ₂ or Au ₂ Cl ₆	303.33	claret-red cr pr	3.9	d 254	subl 265	68	v s	s KCN, NH ₄ OH; i eth, alk
g96	(I) cyanide	AuCN	222.98	lt yel cr powd	7.12 ²⁵	d		v sl s	v sl s	s al, eth
g97	(III) cyanide	Cyanoauric acid. Au(CN) ₃ ·3H ₂ O or HAu(CN) ₄ ·3H ₂ O	329.07 or 356.09	col pl, hydr		d 50		v s	d, v s	s KI
g98	(I) iodide	AuI	323.87	grnsh-yel powd	8.25	d 120		v sl s	sl s d	s iodides
g99	(III) iodide	AuI ₃	577.68	dk gm		d 72		i	d	s HNO ₃
g100	(III) nitrate, hydrogen	Nitratouric acid. AuH(NO ₃) ₄ ·3H ₂ O or H[Au(NO ₃) ₄ ·3H ₂ O]	500.04	yel, tric, oct	2.84	d 72		s, d		
g101	(III) oxide	Au ₂ O ₃	441.93			-O, 160	-3O, 250	i	i	s HCl, conc HNO ₃ , NaCN
g102	(III) oxide	Au ₂ O ₃ ·xH ₂ O				-1 1/2 H ₂ O, 250		5.7 × 10 ⁻¹¹ 25		s HCl, NaCN, conc HNO ₃
g103	phosphide	Au ₂ P ₃	486.85	gray	6.67		d			i HCl, dil HNO ₃
g104	selenide	Au ₂ Se ₂	630.81		4.65 ²²					
g105	(I) sulfide	Au ₂ S	425.99	br blk powd	8.754	d 240		i fresh sol	ppt coll	s sq reg, KCN; i a
g106	(III) sulfide	Au ₂ S ₃	490.11	br blk powd	8.754	d 197		i		i al, eth, s Na ₂ S
g107	telluride, di-	Nat. krennerite. AuTe ₂	452.17	1) rhomb, 2) monoc, 3) tricrl yel earthy to massive	8.2-9.3	d 472		i	i	
h1	Hafnium	Hf	178.49 ± 3	hex	13.31 ²⁰	2227 ± 20	4602	i	i	s HF
h2	bromide	HfBr ₄	498.11	wh		subl 420		i		
h3	carbide	HfC	190.50		12.20	ca 3890				
h4	chloride	HfCl ₄	320.30	wh		subl 319		d		s MeOH, acet
h5	fluoride	HfF ₄	254.48	monocl, 1.56						
h6	iodide	HfI ₄	686.11				400 subl vac			
h7	nitride	HfN	192.50	yel-brn, cub		3305				
h8	oxide	Hafnia. HfO ₂	210.49	wh, cub	9.68 ²⁰	2758 ± 25	~5400(?)	i	i	
h9	oxychloride	HfOCl ₂ ·8H ₂ O	409.52	col				s		
h10	Helium	He	4.00260	col gas, inert odorless	0.1785 ⁰ g/l liq 0.147-270.3	-272.2 ²⁶ atm	-268.9	0.94 ⁰ cm ³ 0.94 ²⁵ cm ³	1.05 ⁵⁰ cm ³ 1.21 ⁷⁵ cm ³	i al; absorbed by Pt
h11	Holmium	Ho	164.9304	met, hex	8.7947	1474	2695	i	i	
h12	bromide	HoBr ₃	404.64	lt yel		914	1470	s	s	
h13	chloride	HoCl ₃	271.29	lt yel		718	1500	s	s	
h14	iodide	HoI ₃	545.64	lt yel		989	1300	s	s	
h15	fluoride	HoF ₃	221.93	lt yel		1143	>2200	i	i	i dil a

PHYSICAL CONSTANTS OF INORGANIC COMPOUNDS (continued)

No.	Name	Synonyms and Formulae	Mol. wt.	Crystalline form, properties and Index of refraction	Density or spec. gravity	Melting point, °C	Boiling point, °C	Solubility, in grams per 100 cc		
								Cold water	Hot water	Other solvents
i147	methanoarsenate	$\text{Fe}_2(\text{CH}_3\text{AsO}_3)_3$	525.56	redsh br lustr scales				50		i al, eth
i148	(II) nitrate	$\text{Fe}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$	287.95	grn, rhomb		60.5		83.5 ²⁰	166.7 ⁶¹	
i149	(III) nitrate	$\text{Fe}(\text{NO}_3)_3 \cdot 6\text{H}_2\text{O}$	349.95	cub		35	d	150 ⁰	∞	
i150	(III) nitrate	$\text{Fe}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$	404.00	col-pa vlt, monoc, deliq	1.684	47.2	d 125	s	s	s al, acet; sl s HNO_3
i151	nitride	Fe_4N	237.39		6.57(?)					
i152	nitride	Fe_2N or Fe_4N_2	125.70	gray	6.35	d 200		i		s HCl, H_2SO_4
i153	nitrosyl carbonyl	$\text{Fe}(\text{NO})_2(\text{CO})_2$	171.88	dk red cr	1.56	18.5	d 50, 110	i		s org solv
i154	(III) oleate	$\text{Fe}(\text{C}_{18}\text{H}_{33}\text{O}_2)_3$	900.22	br-red fatty lumps				i		s a, al, eth
i155	(II) oxalate	$\text{FeC}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$	179.90	pa yel, rhomb	2.28	d 190		0.022	0.026	s a
i156	(III) oxalate	$\text{Fe}_2(\text{C}_2\text{O}_4)_3 \cdot 5\text{H}_2\text{O}$	465.83	yel micro cr powd		d 100		v s	v s	s a; i al
i157	(II) oxide	Nat. wuestite. FeO	71.85	blk, cub, 2.32	5.7	1369 $\pm$ 1		i	i	s a; i al, alk
i158	(III) oxide	Nat. hematite. Fe_2O_3	159.69	red-brn to blk, trig, 3.01, 2.94(Li)	5.24	1565		i	i	s HCl, H_2SO_4 ; sl s HNO_3
i159	oxide	Iron ferrosferic, nat. magnetite. Fe_3O_4	231.54	blk, cub or red-blk powd, 2.42	5.18	1594 $\pm$ 5		i	i	s conc a; i al, eth
i160	(III) oxide, hydrate	$\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$		red-brn amorph powd or gelat	2.44—3.60	all H_2O , 350—400		i	i	s a; i al, eth
i161	(II) orthophosphate	Nat. vivianite. $\text{Fe}_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$	501.61	wh-bl, monocl, 1.579, 1.603, 1.633	2.58			i	i	s a; i ac a
i162	(III) orthophosphate	$\text{FePO}_4 \cdot 2\text{H}_2\text{O}$	186.85	pink, monocl	2.74	d		v sl s	0.67 ¹⁰⁰	s HCl, H_2SO_4 ; i HNO_3
i163	(III) pyrophosphate	$\text{Fe}_4(\text{P}_2\text{O}_7)_3 \cdot 9\text{H}_2\text{O}$	907.36	yel-wh powd				i		s a, alk citr
i164	phosphide, mono-	FeP	86.82	rhomb	6.07 (5.2 ²⁰)					
i165	(di-)phosphide	Fe_2P	142.67	bl-gray cr or powd	6.56	1290		i	i	s aq reg, HNO_3 + HF; i dil a
i166	(tri-)phosphide	Fe_3P	198.51	gray	6.74	1100		i		
i167	(III) hypophosphite	$\text{Fe}(\text{H}_2\text{PO}_2)_3$	250.81	wh or gray-wh powd		d		0.043 ²⁵	0.083 ¹⁰⁰	s alk citr
i168	(II) metasilicate	Nat. grunerite. FeSiO_3	131.93	gray-grn, rhomb, 1.672, 1.697, 1.717	3.5	1146				
i169	orthosilicate	Nat. fayalite; Fe_2SiO_4	203.78	col, rhomb	4.34	1503 (?)		i	i	d HCl
i170	silicide	FeSi	83.93	yel-gray, oct	6.1			i	i	i aq reg
i171	(II) sulfate	Nat. szomolnokite. $\text{FeSO}_4 \cdot \text{H}_2\text{O}$	169.92	off-wh, monocl	2.970 ²⁵			sl s	s	
i172	(III) sulfate	$\text{Fe}_2(\text{SO}_4)_3$	399.87	yel rhomb, hydr, 1.814	3.097 ¹⁸	d 480		sl s	d	i H_2SO_4 , NH_3
i173	(II) sulfate, heptahydrate	Nat. melanterite. $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$	278.01	bl-grn, monocl, 1.471, 1.478, 1.486	1.898	64 — $6\text{H}_2\text{O}$, 90	— $7\text{H}_2\text{O}$, 300	15.65	48.6 ⁵⁰	sl s al; s abs MeOH
i174	(II) sulfate, pentahydrate	Nat. siderit. $\text{FeSO}_4 \cdot 5\text{H}_2\text{O}$	241.98	wh, tricl, 1.526, 1.536, 1.542	2.2	— $5\text{H}_2\text{O}$, 300		s	s	i al
i175	(II) sulfate, tetrahydrate	$\text{FeSO}_4 \cdot 4\text{H}_2\text{O}$	223.97	grn monocl pr, 1.533, 1.535	2.23—2.29					
i176	(III) sulfate, enneahydrate	Nat. coquimbite. $\text{Fe}_2(\text{SO}_4)_3 \cdot 9\text{H}_2\text{O}$	562.00	rhomb, deliq, 1.552, 1.558	2.1	— $7\text{H}_2\text{O}$, 175		440	d	s abs al
i177	sulfide, di-	Nat. pyrite. FeS_2	119.97	yel, cub	5.0	1171		0.00049		d HNO_3 , dil a
i178	sulfide, di-	Nat. marcasite. FeS_2	119.97	yel, rhomb	4.87	tr 450	d	0.00049		d HNO_3 , i dil a
i179	(II) sulfide	Nat. troilite. FeS	87.91	blk-brn, hex	4.74	1193—1199	d	0.00062 ¹⁸	d	s d a; i NH_3
i180	(III) sulfide	FeS_3	207.87	yel-grn	4.3	d		sl d	d	d FeS + S
i181	(II) sulfite	$\text{FeSO}_3 \cdot 3\text{H}_2\text{O}$	189.95	grnsh or wh cr		d 250		s sl s		s SO_2 sol; i al
i182	tantalate	Nat. tapiolite. $\text{Fe}(\text{TaO}_3)_2$	513.74	lt brn, tetr, 2.27, 2.42 (Li)	7.33					
i183	d-tartrate	$\text{FeC}_4\text{H}_4\text{O}_6$	203.92	wh cr.				0.877 ¹⁶	v sl s	v s min a; s NH_4OH
i184	(II) thiocyanate	$\text{Fe}(\text{SCN})_2 \cdot 3\text{H}_2\text{O}$	226.05	grn, rhomb		d		v s	v s	s al, eth, acet
i185	(III) thiocyanate	$\text{Fe}(\text{SCN})_3$ or $\text{Fe}_2(\text{SCN})_6$	230.08	blk-red, cub, deliq				v s	d	s al, eth, acet
i186	(II) thiosulfate	$\text{FeS}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$	258.04	grn cr, deliq				v s	d	v s al
i187	tungstate	Nat. ferberite. FeWO_4	303.69	tetr, 2.40 (Li)	6.64					
i188	metavanadate	$\text{Fe}(\text{VO}_3)_3$	352.67	grayish-brn powd.				i		s a; i al
k1	Krypton	Kr	83.80	inert gas	gas 3.736 g/l liq 2.155 at — 152.9	— 156.6	— 152.30 $\pm$ 0.10	11.0 ⁰ cm ³ 6.0 ²⁵ cm ³	4.67 ⁵⁰ cm ³	
11	Lanthanum	La	138.9055 $\pm$ 3	wh met, tarnish in air, α : hex, β : cut above 350	α 6.1453, β 6.17	921	3457	d	d	s min a; i conc H_2SO_4
12	acetate	$\text{La}(\text{C}_2\text{H}_3\text{O}_2)_3 \cdot 1\frac{1}{2}\text{H}_2\text{O}$	343.06					16.88 ²⁵		
13	boride, hexa-	LaB_6	203.77	purp met cub	2.61	2210	d	i	i	i HCl
14	bromate	$\text{La}(\text{BrO}_3)_3 \cdot 9\text{H}_2\text{O}$	684.75	hex pr	37.5	— $7\text{H}_2\text{O}$, 100		28.5 ¹⁶		v s al; i eth
15	bromide	$\text{LaBr}_3 \cdot 7\text{H}_2\text{O}$	504.72	col cr.	5.057 ²⁶ anh	783 $\pm$ 3 anh	1577	v s		s H_2SO_4 ; i conc HNO_3
16	carbide	LaC_2	162.93	yel cr.	5.02			d	d	s dil a; sl s aq CO_2 ; i acet
17	carbonate	$\text{La}_2(\text{CO}_3)_3 \cdot 8\text{H}_2\text{O}$	601.96	wh	2.6—2.7			i	i	v s al, pyr; i eth, bz
18	chloride	LaCl_3	245.26	wh cr, deliq.	3.842 ²⁵	860	> 1000	v s	d	v s al
19	chloride, heptahydrate	$\text{LaCl}_3 \cdot 7\text{H}_2\text{O}$	371.37	wh, tricl, hydr		d 91		v s	v s	
110	hexaantipyrin perchlorate	$[\text{La}(\text{C}_{11}\text{H}_{12}\text{N}_2\text{O})_6](\text{ClO}_4)_3$	1566.63	col, hex cr		d 290—295		1.50 ²⁰		
111	hydroxide	$\text{La}(\text{OH})_3$	189.93	wh powd		d		i		s a

PHYSICAL CONSTANTS OF INORGANIC COMPOUNDS (continued)

No.	Name	Synonyms and Formulae	Mol. wt.	Crystalline form, properties and index of refraction	Density or spec. gravity	Melting point, °C	Boiling point, °C	Solubility, in grams per 100 cc		
								Cold water	Hot water	Other solvents
112	iodate	La(IO ₃) ₃	663.62	col. cr				1.725		
113	iodide	LaI ₃	519.62	gray-wh, rhomb, hydr.	5.63	772		v s		s acet
114	molybdate	La ₂ (MoO ₄) ₃	757.62	tetr.	4.77 ¹⁶	1181		0.00179 ²⁵	0.0033 ⁸⁵	
115	nitrate	La(NO ₃) ₃ ·6H ₂ O	433.01	col cr, deliq, tricl		40	d 126	151.1 ²⁵	v s	v s al; s acet
116	oxalate	La ₂ (C ₂ O ₄) ₃ ·9H ₂ O	704.01	wh cr.		d		0.00008 ²⁵		s min a
117	oxide	Lanthana. La ₂ O ₃	325.81	wh rhomb, or amorph.	6.51 ¹⁵	2307	4200	0.0004 ²⁹	d	s a, NH ₄ Cl; i acet
118	sulfate	La ₂ (SO ₄) ₃	565.98	wh powd, hydr.	3.60 ¹⁵	d 1150		3.0	0.69 ¹⁰⁰	sl s al; i acet
119	sulfate, hydrate	La ₂ (SO ₄) ₃ ·9H ₂ O	728.12	col hex, 1.564	2.821	d white heat		3.8 ⁰	0.87 ¹⁰⁰	sl s HCl; i al
120	sulfide	La ₂ S ₃	373.99	red-yel cr, hex	4.911 ¹¹	2100—2150 vac		d	d	s a
121	Lead	Pb	207.20	silv-blsh wh soft met, cub, 2.01	11.3437 ¹⁶ Ra-Pb 11.288 ³⁰ UPb 11.2960 ¹⁶	327.502	1740	i	i	s HNO ₃ , h conc H ₂ SO ₄
122	abietate	Pb(C ₂₀ H ₂₉ O ₂) ₂	810.10	brn lumps or yelsh-wh powd				i		
123	acetate	Pb(C ₂ H ₃ O ₂) ₂	325.29	wh cr.	3.25 ³⁰	280		44.30 ²⁰	221 ⁵⁰	s glyce; v sl s al
124	acetate, basic	Pb ₂ (OH)(C ₂ H ₃ O ₂) ₃	608.54	wh				v s		sl s al
125	acetate, basic	Pb(C ₂ H ₃ O ₂) ₂ ·3PbO·H ₂ O	1012.90	wh powd						
126	acetate, basic	Pb(C ₂ H ₃ O ₂) ₂ ·Pb(OH) ₂ ·H ₂ O	584.52	wh, monocl.				v s		v s al
127	acetate, decahydrate	Pb(C ₂ H ₃ O ₂) ₂ ·10H ₂ O	505.44	wh, rhomb cr.	1.69	22		s	s	i al
128	acetate, trihydrate	Sugar of lead. Pb(C ₂ H ₃ O ₂) ₂ ·3H ₂ O	379.34	wh, monocl, β 1.567	2.55	—H ₂ O, 75	d 200	45.61 ¹⁵	200 ¹⁰⁰	i al
129	acetate, tetra-	Pb(C ₂ H ₃ O ₂) ₄	443.38	col, monocl.	2.228 ¹⁷	175		d		d al; s chl, h ac a
130	antimonate	Pb ₂ Sb ₂ O ₇	769.90	dk yel powd	6.72			i	i	v sl s HCl
131	orthoantimonate	Pb ₃ (SbO ₄) ₂	993.10	or-yel powd.	6.58 ³⁰			i	i	v sl s HCl
132	orthoantimonate	Nat. monimolite. Pb ₃ (SbO ₄) ₂	993.10	orange powd	6.58 ³⁰			i		i dil a
133	metaarsenate	Pb(AsO ₃) ₂	453.04	hex tabl	6.42 ¹⁵			d	d	s HNO ₃
134	orthoarsenate	Pb ₃ (AsO ₄) ₂	899.44	wh cr, v pois	7.80	1042, sl d 1000		v sl s		s HNO ₃
135	orthoarsenate, di-	Nat. schultenite. PbHAsO ₄	347.13	monocl leaf, α 1.90, γ 1.97	5.79	d 720	—H ₂ O, 220	i	sl s	s HNO ₃ , caust alk
136	orthoarsenate, mono-	Pb(H ₂ AsO ₄) ₂	489.07	tri-cl, 1.74, 1.82	4.46 ¹⁵	d 140		d		s HNO ₃
137	pyroarsenate	Pb ₂ As ₂ O ₇	676.24	rhomb, β 2.03	6.85 ¹⁸	802		i	d	s HCl, HNO ₃ ; i ac a
138	metaarsenite	Pb(AsO ₂) ₂	421.04	wh powd	5.85			i		s HNO ₃
139	orthoarsenite	Pb ₃ (AsO ₃) ₂ ·xH ₂ O		wh powd	5.85			i		s alk, HNO ₃
140	azide	Pb(N ₃) ₂	291.24	col need, or powd.			expl 350	0.023 ¹⁸	0.09 ⁷⁰	v s ac a; i NH ₄ OH
141	metaborate	Pb(BO ₂) ₂ ·H ₂ O	310.83	wh cr powd	5.598, anhydr	—H ₂ O, 160		i	i	s a; i alk
142	borofluoride	Pb(BF ₄) ₂	380.81	cr pr				d		d al
143	bromate	Pb(BrO ₃) ₂ ·H ₂ O	481.02	col, monocl.	5.53	d 180		1.38 ²⁰	sl s	
144	bromide	PbBr ₂	367.01	wh, rhomb	6.66	373	916	0.4554 ⁰ 0.8441 ²⁰	4.71 ¹⁰⁰	s a, KBr; sl s NH ₃ ; i al
145	buryrate	Pb(C ₄ H ₇ O ₂) ₂	381.40	col scales, pois.		90		i	i	s dil HNO ₃
146	caprate	Pb(C ₁₀ H ₁₉ O ₂) ₂	549.72			103—104		i	i	0.0029 ²⁰ eth
147	caproate	Pb(C ₆ H ₁₁ O ₂) ₂	437.50			73—74				1.09 ²⁵ eth
148	caprylate	Lead octoate. Pb(C ₈ H ₁₅ O ₂) ₂	493.61	wh leaf		83.5—84.5		i	i	s al; 0.0938 eth
149	carbonate	Nat. cerussite. PbCO ₃	267.21	col, rhomb, 1.804, 2.076, 2.078	6.6	d 315		0.00011 ²⁰	d	s a, alk; i NH ₃ , al
150	carbonate, basic	White lead, hydrocerussite. 2PbCO ₃ ·Pb(OH) ₂	775.63	wh powd, or hex.	6.14	d 400		i	i	sl s aq CO ₂ ; s HNO ₃ ; i al
151	cerotate	Pb(C ₂₂ H ₃₅ O ₂) ₂	998.58	wh need		113		i		i al, eth; s bz
152	chlorate	Pb(ClO ₃) ₂	374.10	wh monocl, deliq	3.89	d 230		v s		s al
153	chlorate, hydrate	Pb(ClO ₃) ₂ ·H ₂ O	392.12	wh, monocl, deliq	4.037	d 110		151.3 ¹⁸	171 ⁸⁰	s al
154	perchlorate	Pb(ClO ₄) ₂ ·3H ₂ O	460.15	wh, rhomb	2.6	d 100		499.7 ²⁶		s al
155	chloride	Nat. cotunnite. PbCl ₂	278.11	wh, rhomb, 2.199, 2.217, 2.260	5.85	501	950 ⁷⁶⁰	0.99 ²⁰	3.34 ¹⁰⁰	sl s dil HCl, NH ₃ ; i al; s NH ₄ salts
156	chloride, tetra-	PbCl ₄	349.01	yel oily liq	3.18 ⁰	—15	expl 105	d (Cl ₂)	d	s conc HCl
157	chloride, sulfide	PbCl ₂ ·3PbS	995.89	red				i	d	d a, alk; i dil a
158	chlorite	Pb(ClO ₂) ₂	342.10	yel, monocl.		espl 126		0.095 ²⁰	0.42 ¹⁰⁰	s KOH
159	chromate	Nat. crocoite, chrome yellow. PbCrO ₄	323.19	yel, monocl, 2.31, 2.37(Li), 2.66	6.12 ¹⁵	844	d	0.000058 ²⁵		s a, alk; i ac a, NH ₃
160	chromate, basic	Chrome red. PbCrO ₄ ·PbO	546.39	red cr powd.	6.63			i	i	s a, alk
161	chromate, basic	Pb ₂ (OH) ₂ CrO ₄	564.41	red amorph or cr	6.63	920		i	i	s KOH
162	dichromate	PbCr ₂ O ₇	423.19	red cr				d		s a, alk
163	citrate	Pb ₃ (C ₆ H ₅ O ₇) ₂ ·3H ₂ O	1053.85	wh cr powd.				s		v sl s al
164	cyanate	Pb(OCN) ₂	291.23	wh need		d		i	sl s	
165	cyanide	Pb(CN) ₂	259.24	yelsh-wh powd, pois.				sl s	s	s KCN
166	enanthate	Pb(C ₇ H ₁₃ O ₂) ₂	465.56	wh leaf		91.5		sl s		i al
167	ethylsulfate	Pb(C ₂ H ₅ SO ₄) ₂ ·2H ₂ O	493.47	col liq, pois.				s		
168	ferricyanide	Pb ₃ [Fe(CN) ₆] ₂ ·5 (or 6) H ₂ O	1135.58	blk-brn to red, monocl pr		—H ₂ O, 110—120 d		sl s	s, d 100	s alk, HNO ₃
169	ferrite	PbFe ₂ O ₄	382.89	hex		1530 d, 725				
170	ferricyanide	Pb ₂ Fe(CN) ₆ ·3H ₂ O	680.40	yelsh-wh powd.		—H ₂ O, 100		i		sl s H ₂ SO ₄
171	fluoride	PbF ₂	245.20	col, rhomb, pois	8.24	855	1290	0.064 ²⁰		s HNO ₃ ; i acet, NH ₃

PHYSICAL CONSTANTS OF INORGANIC COMPOUNDS (continued)

No.	Name	Synonyms and Formulae	Mol. wt.	Crystalline form, properties and index of refraction	Density or spec. gravity	Melting point, °C	Boiling point, °C	Solubility, in grams per 100 cc		
								Cold water	Hot water	Other solvents
s54	hydride	H ₂ Se	80.98	col gas, pois	gas 3.664 ⁷⁶⁰ air; liq: 2.004 ^{-41.5}	60.4	-41.5	3.77 ⁴	270 ^{22.5}	s CS ₂ , COCl ₂
s55	iodide, "mono"	Diselenium diiodide, Se ₂ I ₂	411.73	steelgray cr (exist ?)		68-70	d 100	d	d	
s56	nitride	Se ₄ N ₄	371.87	amorph, or yel-brickred, hydr.		expl 160—200	d	u	sl d	i al, eth; v sl s acet ac, bz
s57	oxide, di-	SeO ₂	110.96	wh. monocl, col, tetr, pois, >1.76	3.95 ¹³	340—350 subl 315—317		38.4 ¹⁴	82.5 ⁶⁵	6.67 ¹⁴ al; 4.35 ¹⁵ s acet; 1.11 ¹³ ac a; s bz
s58	oxide, tri-	SeO ₃	126.96	pa yel cub or fiber, deliq	3.6	118	d 180	d, v s	d, v s	s al, conc H ₂ SO ₄ ; i eth, bz, chl CCl ₄
s59	oxybromide	Selenyl bromide, SeOBr ₂	254.77	red yel cr	liq 3.38 ⁵⁰	41.6	217 ⁷¹⁰ d	d		s CS ₂ , CCl ₄ , chl, H ₂ SO ₄ , bz
s60	oxychloride	SeOCl ₂	165.87	col-yel, liq 1.651 ²⁰	2.42 ²²	8.5	176.4	d		s CS ₂ , CCl ₄ , chl, bz
s61	sulfur oxytetrachloride	SeSO ₂ Cl ₄	300.83	hex pr	165	165	183	d		
s62	oxyfluoride	Selenyl fluoride, SeOF ₂	132.96	col liq	2.67	4.6	124	d		s al, CCl ₄
s63	sulfide, di-	SeS ₂	143.08	br red-yel	<100		d	i		d aq reg, HNO ₃ ; s (NH ₄) ₂ S
s64	sulfide, "mono"	SeS	111.02	or-yel tabl or powd	3.056 ⁰	d 118—119		i	i	s CS ₂ ; i ethl d al
s65	sulfur oxide	SeSO ₂	159.02	grn pr or yel powd	3.004 ¹⁵	-SO ₂ , 40		d, 118		s H ₂ SO ₄ ; i SO ₃
s67	Selenious acid	H ₂ SeO ₃	128.97	col, hex, deliq	1.72 ⁻⁸⁰	d 70	-H ₂ O	167 ²⁰	v s	v s al; i NH ₃
s68	Silane, bromo-	SiH ₃ Br	111.01	col gas, expl in air	1.533 ⁰	-94	1.9			
s69	bromotrichloro-	SiBrCl ₃	214.35	col liq	1.826	-62	80.3	d	d	
s70	chloro-	SiH ₃ Cl	66.56	col gas	gas: 3.033 g/l liq: 1.145 ⁻¹¹³	-118.1	-30.4			
s71	dibromo-	SiH ₂ Br ₂	189.91	col liq, inflam	2.17 ⁰	-70.1	66	d		d alk
s72	dibromo-	Silicobromoform, SiHBr ₂	268.81	col liq, inflam	2.71 ⁷	-73	109	d	d	d NH ₃
s73	dibromodichloro-	SiBr ₂ Cl ₂	258.80	col liq	2.172 ²⁵	-45.5	104	d	d	
s74	dichloro-	SiH ₂ Cl ₂	101.01	gas	gas 4.599 g/l liq 1.42 ⁻¹²²	-122	8.3	d		
s75	dichloro difluoro-	SiCl ₂ F ₂	136.99	gas	6.2784 g/l	-144 ± 2	-31.7 ± 0.2	d	d	
s76	(hexa-) hexaoxocyclo-	Siloxane Si ₆ O ₃ H ₆	222.56	wh, pl	1.32 ²⁰	d 140, inflam		sl d	d	
s77	monochloro trifluoro-	SiClF ₃	120.53	gas	5.455 g/l	-138.0 ± 2	-70.0 ± 0.2d	d	d	
s78	monoiodo-	SiH ₂ I	158.01	col liq	2.035 ^{14.8}	-57.0	45.5	d		
s79	(tri-)nitrido-	Silicylamine, tri-(SiH ₃) ₃ N	107.33	col inflam liq	0.895 ⁻¹⁰⁶	-105.6				
s81	tribromochloro-	SiBr ₃ Cl	303.25	col liq	2.497 ²⁵	-20.8 ± 1	126-128	d	d	
s82	trichloro-	Silicobromochloroform, SiHCl ₃	135.45	col liq	1.34	-126.5	33 ⁷⁶⁸ mm	d	d	s CS ₂ , CCl ₄ , chl, bz
s83	trichloroiodo-	SiCl ₃ I	261.35	col liq		>-60	113.5	d		
s84	trifluoro-	Silicofluoroform, SiHF ₃	86.09	col gas	3.86 ⁰ g/l	-131.4	ca-95	d	d	d al, eth, alk; s tol
s85	triiodo-	Siliciodoform, SiHI ₃	409.81	red liq	3.314 ²⁰	8	220	d	d	s CS ₂ , bz
s86	Silicane cyanate	Si(OCN) ₄	196.15	sol or liq	1.414 ²⁰	34.5 ± 0.5	247.2 ± 0.5 0.5 ⁷⁶⁰	d		
s87	diimide	Si(NH) ₂	58.11	wh powd		d 900				
s88	isocyanate	Si(NCO) ₄	196.15	sol or liq	1.434 ²⁵	26.0 ± 0.5	185.6 ± 0.3 ⁷⁶⁰	d		i acet; s bz, CCl ₄ , CS ₂
s89	Silicic acid, di-	H ₂ Si ₂ O ₅	138.18	col cr		d 150		i	i	s NH ₃ , HF
s90	meta-	H ₂ SiO ₃	78.10	col, amorph		d room temp		i	i	s NH ₃ , HF, h alk
s91	Silicon	Si	28.0855 ± 3	steel gray, large to micr cr, cub	2.32—2.34	1410	2355	i	i	s HF + HNO ₃ ; i HF
s92	acetate, tetra-	Si(C ₂ H ₃ O ₂) ₄	264.26	col cr, hydr		subl 110 d 160—170	148 ⁶ mm	d		d al; sl s acet, bz
s93	bromide, tetra-	Tetrabromosilane, SiBr ₄	347.70	col fum liq, sol cub	liq: 2.7715 ²⁵ sol: 3.292 ⁻⁷⁹	5.4	154	d	d	d H ₂ SO ₄
s94	(di-) bromide, hexa-	Si ₂ Br ₆	535.60	wh, rhomb		95	240	d	d	s CS ₂ ; d KOH
s95	bromide(di-) sulfide	SiSBr ₂	219.95	col pl		93	150 ^{18.3} mm	d	d	s bz, CS ₂
s96	carbide	SiC	40.10	col-blk, hex or cub, 2.654, 2.697	3.217	~2700, subl, d		i	i	i a; s fus KOH
s97	chloride, tetra-	Tetrachlorosilane, SiCl ₄	169.90	col fum liq	liq: 1.483 ²⁰ sol: 1.90 ⁻⁹⁷ gas: 7.59 g/l	-70	57.57	d	d	d al
s98	(di-)chloride, hexa-	Hexachlorodisilane, Si ₂ Cl ₆	268.89	col liq, 1.4748 ¹⁸	1.58 ⁰	-1	145 ⁷⁶⁹	d	d	d al
s99	chloride(di-) sulfide	SiS ₂ Cl ₂	131.05	col pr		75	92 ^{22.5}	d	d	s CCl ₄ , CS ₂ bz
s100	chloride(tri-) sulfide, hydro-	SiCl ₃ HS	167.51	col liq	1.45		96—100	d	d	d al
s101	fluoride, tetra-	Tetrafluorosilane, SiF ₄	104.08	col gas	gas: 4.69 g/l ⁷⁶⁰ liq: 1.66 ⁻⁹⁵	-90.2	-86	d	d	s abs al, HF; i eth
s102	(di-)fluoride, hexa-	Hexafluorodisilane, Si ₂ F ₆	170.16	gas	7.759 g/l	-18.7	-18.5	d	d	
s103	hydride	Silane, silicane, SiH ₄	32.12	col gas	liq: 0.68 ⁻⁸⁵ gas: 1.44 g/l	-185	-111.8 ⁷⁶⁰ mm	i		d KOH
s104	hydride	Disilane, disilicane, Si ₂ H ₆	62.22	col gas	gas: 2.865 g/l liq: 0.686 ⁻²⁰	-132.5	-14.5	sl d		s al, bz, CS ₂

PHYSICAL CONSTANTS OF INORGANIC COMPOUNDS (continued)

No.	Name	Synonyms and Formulae	Mol. wt.	Crystalline form, properties and index of refraction	Density or spec. gravity	Melting point, °C	Boiling point, °C	Solubility, in grams per 100 cc		
								Cold water	Hot water	Other solvents
s105	hydride	Trisilane, trisilane propane. Si_3H_8	92.32	col liq	liq: 0.743 ⁰ ; gas: 4.15 g/ ℓ^{760}	-117.4	52.9	d	d	d CCl_4
s106	hydride	Tetrasilane, tetrasilane butane. Si_4H_{10}	122.42	col liq	liq: 0.79 ⁰ gas 5.48 g/ ℓ^{760}	-108	84.3	d	d	
s107	iodide, tetra-	Tetraiodosilane. SiI_4	535.70	col, cub	4.198	120.5	287.5	d	d	2.2 ²⁷ CS_2
s108	(di-)iodide, hexa-	Hexaiodosilane. Si_2I_6	817.60	col, hex	d 250	d 250	d	d	d	19 ¹⁹ CS_2
s109	nitride	Si_3N_4	140.28	gray-wh amorph powd	3.44	1900 press		i	i	s HF
s110	oxide, di-	Nat. cristobalite. SiO_2	60.08	col, cub or tetr, 1.487, 1.484	2.32	1723 $\pm$ 5	2230 (2590)	i	i	s HF; v sl s alk
s111	oxide, di-	Nat. lechatelierite. SiO_2	60.08	col, amorph, vitr, 1.4588	2.19		2230 (2590)	i	i	s HF; v sl s alk
s112	oxide, di-	Nat. opal. $\text{SiO}_2 \cdot x\text{H}_2\text{O}$		col. amorph 1.41—1.46	2.17—2.20	>1600		i	i	s HF; v sl s alk
s113	oxide, di-	Nat. tridymite. SiO_2	60.08	col, rhomb, 1.469, 1.470, 1.471	2.26 ²⁵	1703	2230 (2590)	i	i	s HF; v sl s alk
s114	oxide, di-	Nat. quartz. SiO_2	60.08	col, hex, 1.544, 1.553	2.635—2.660	1610	2230 (2590)	i	i	s HF; v sl s alk
s115	oxide, mon-	SiO	44.08	wh, cub	2.13	>1702	1880	i	i	s dil HF + HNO_3
s116	oxychloride	Chlorosiloxane. Si_2OCl_6	284.89	col liq		28.1 $\pm$ 0.2	137	d	d	∞ CS_2 , CCl_4
s117	oxyfluoride	Si_2OF_6	186.16	col gas.	1.358 liq	-47.8 $\pm$ 0.5	-23.3	d	d	d alk
s118	sulfide, di-	SiS_2	92.21	wh need, rhomb	2.02	subl 1090	white heat	d	d	d al, liq NH_3 ; s dil alk; i bz
s119	sulfide, mono-	SiS	60.15	yel need	1.853 ¹⁵	subl 940 ²⁰		d	d	d al, alk
s120	thiocyanate	$\text{Si}(\text{CNS})_4$	260.40	wh, rhomb need	1.409 ²⁰	143.8	314.2	d	d	d al, a, alk; i eth. CS_2 , CHCl_3
s121	Silicotungstic acid	$\text{H}_4[\text{Si}(\text{W}_3\text{O}_{10})_4] \cdot 26\text{H}_2\text{O}$	3346.69	wh-sl yel cr, deliq				v s	v s	v s al
s122	Silicic acid	Disiloxane $(\text{SiH}_3)_2\text{O}$	78.22	col gas.	gas: 3.491 g/ ℓ liq: 0.881— ⁸⁰	-144	-15.2	v sl s	sl d	
s123	Siloxane, (di-), oxide	$[\text{H}(\text{O})\text{Si}]_2\text{O}$	106.19	wh volum subst		expl ca 300		sl s		s, d HF; d al
s124	Silver	Ag	107.8682 $\pm$ 3	wh met, cub 0.54	10.5 ²⁰	961.93	2212	i	i	s HNO_3 , h H_2SO_4 , KCN; i alk
s125	acetate	$\text{AgC}_2\text{H}_3\text{O}_2$	166.91	wh pl.	3.259 ¹⁵	d		1.02 ²⁰	2.52 ⁸⁰	s dil HNO_3
s126	acetylide	Ag_2C_2	239.76	wh ppt		expl		i		s a; sl s al
s127	orthoarsenate	Ag_3AsO_4	462.52	dk red, cub	6.657 ²⁵	d		0.00085 ²⁰		s NH_4OH , ac a
s128	orthoarsenite	Ag_3AsO_3	446.52	yel, powd		d 150		0.00115 ²⁰	i	s ac a, NH_4OH , HNO_3 ; i al
s129	azide	AgN_3	149.89	wh rhomb pr, expl		252	297	i	0.01 ¹⁰⁰	s KCN, dil HNO_3 ; sl s NH_4OH
s130	benzoate	$\text{AgC}_7\text{H}_5\text{O}_2$	228.98	wh powd				0.262 ²⁵	s	0.017 al
s131	tetraborate	$\text{Ag}_2\text{B}_4\text{O}_7 \cdot 2\text{H}_2\text{O}$	407.00	wh cr.				sl s		s a
s132	bromate	AgBrO_3	235.77	col, tetr, 1.874, 1.920	5.206	d		0.196 ²⁵	1.33 ⁹⁰	s NH_4OH ; sl s HNO_3
s133	bromide	Bromyrite: AgBr	187.77	pa yel, 2.253	6.473 ²⁵	432	d >1300	8.4 $\times 10^{-6}$	0.00037 ¹⁰⁰	s KCN, $\text{Na}_2\text{S}_2\text{O}_3$, NaCl sol; sl s NH_4OH ; i al
s134	carbonate	Ag_2CO_3	275.75	yel powd	6.077	d 218		0.0032 ²⁰	0.05 ¹⁰⁰	s NH_4OH , $\text{Na}_2\text{S}_2\text{O}_3$; i al
s135	chlorate	AgClO_3	191.32	wh, tetr	4.430 ²⁰	230	d 270	10 ¹⁵	50 ⁸⁰	sl s al
s136	perchlorate	AgClO_4	207.32	wh, cr, deliq	2.806 ²⁵	d 486		557 ²⁵	s	s al; 101 tol; 5.28 bz
s137	chloride	Nat. cerargyrite. AgCl	143.32	wh, cub, 2.071	5.56	455	1550	0.000089 ¹⁰	0.0021 ¹⁰⁰	s NH_4OH , $\text{Na}_2\text{S}_2\text{O}_3$, KCN
s138	chlorite	AgClO_2	175.32	yel cr.		105 expl		0.45 ²⁵	2.13 ¹⁰⁰	s NH_4OH , KCN
s139	chromate	Ag_2CrO_4	331.73	red, monoc.	5.625			0.0014 ⁰	0.008 ⁷⁰	s a, NH_4OH , KCN
s140	dichromate	$\text{Ag}_2\text{Cr}_2\text{O}_7$	431.72	red, tricl.	4.770	d		0.0083 ¹⁵	d	s a, NH_4OH , KCN
s141	citrate	$\text{Ag}_3\text{C}_6\text{H}_5\text{O}_7$	512.71	wh need		d		0.028 ¹⁸	sl s	s a, NH_4OH , KCN, $\text{Na}_2\text{S}_2\text{O}_3$
s142	cyanate	AgOCN	149.89	col	4.00	d		sl s	s	s KCN, HNO_3 , NH_4OH
s143	cyanide	AgCN	133.89	wh, hex	3.95	d 320		0.000023 ²⁰		s HNO_3 , NH_4OH , KCN, $\text{Na}_2\text{S}_2\text{O}_3$
s144	ferricyanide	$\text{Ag}_3\text{Fe}(\text{CN})_6$	535.56					0.000066 ²⁰		i a; s NH_4OH , h $(\text{NH}_4)_2\text{CO}_3$
s145	ferrocyanide	$\text{Ag}_4\text{Fe}(\text{CN})_6 \cdot \text{H}_2\text{O}$	661.44	wh				i	i	s KCN; i a, NH_4 salts, NH_4OH
s146	fluogallate	$\text{Ag}_3[\text{GaF}_6] \cdot 10\text{H}_2\text{O}$	687.47	col, orthorhomb cr, 1.493	2.90			v s		i al
s147	fluoride	AgF	126.87	yel, cub, deliq	5.852 ¹⁵ s	435	ca 1159	182 ¹⁵ s	205 ¹⁰⁸	sl s NH_4OH
s148	fluoride, di-	AgF_2	145.87	brn, rhomb	4.57—4.58	690	d 700	d	d	
s149	(di-)fluoride	Ag_2F	234.73	yel, hex	8.57	d 90		d		
s150	fluosilicate	$\text{Ag}_2\text{SiF}_6 \cdot 4\text{H}_2\text{O}$	429.87	wh powd or col cr, deliq		>100	d	v s		
s151	fulminate	$\text{Ag}_2\text{C}_2\text{N}_2\text{O}_2$	299.77	need		expl		0.075 ¹³	s	i HNO_3 ; s NH_4OH
s152	iodate	AgIO_3	282.77	col, rhomb	5.525 ¹⁶ s	>200	d	0.03 ¹⁰	0.019 ⁶⁰	s HNO_3 , NH_4OH , KI
s153	periodate	AgIO_4	298.77	or yel, tetrag	5.57	d 180		d		s HNO_3
s154	iodide(a)	miersite AgI	234.77	ye tetr 2.02 $\pm$.02	5.683 ³⁰	tr 146 to β		2.8 $\times 10^{-7}$ 25	2.5 $\times 10^{-6}$ 60	s KCN, $\text{Na}_2\text{S}_2\text{O}_3$, KI; sl s NH_4OH
s155	iodide (β)	iodyrite AgI	234.77	pa ye hex	6.010 ¹⁴ 6	558	1506			s KI, KCN; i dil a
s156	iodomercurate (α)	Ag_2HgI_4	923.94	yel, tetrag	6.02	tr to β 50.7		i		s KI, KCN; i dil a
s157	iodomercurate (β)	Ag_2HgI_4	923.94	red, cub	5.90	d 158		i		s KI, KCN; i dil a

PHYSICAL CONSTANTS OF INORGANIC COMPOUNDS (continued)

No.	Name	Synonyms and Formulae	Mol. wt.	Crystalline form, properties and Index of refraction	Density or spec. gravity	Melting point, °C	Boiling point, °C	Solubility, in grams per 100 cc		
								Cold water	Hot water	Other solvents
s550	oxide, tri-(γ)	SO ₂	80.06	vitreous, orthorhomb, metastable	liq 1.920 ²⁰ sld 2.29-10	16.8	44.8	d	d	forms fum H ₂ SO ₄
s551	oxytetrachloride, mono-	S ₂ OCl ₄	221.93	dk red liq	1.656 ⁰	d 57	60	d	d	d al
s552	oxytetrachloride, tri-	S ₂ O ₃ Cl ₄	253.93	wh, rhomb need or pl				d	d	d al
s553	trithiazyl chloride	S ₄ N ₃ Cl	205.71	pa yel cr.	1.841 (96-98%)	d 170 (vac) 10.36 (100%) 3.0 (98%)	330 ± 0.5 (100%)	∞ ev heat	∞	d al
s554	Sulfuric acid	H ₂ SO ₄	98.07	col liq	1.650 ⁰	-38.9	167	∞	∞	d al, eth
s555	dihydrate	H ₂ SO ₄ ·2H ₂ O	134.10	col liq, 1.405		-54	290	v s	v s	d al
s556	hexahydrate	H ₂ SO ₄ ·6H ₂ O	206.17	liq				∞	∞	d al
s557	monohydrate	H ₂ SO ₄ ·H ₂ O	116.09	col liq or monoc cr, 1.438	1.788	8.62		v s	v s	s al, eth, H ₂ SO ₄
s558	octahydrate	H ₂ SO ₄ ·8H ₂ O	242.20	liq		-62	d	d	d	s H ₂ PO ₄
s559	peroxidi-	Per(di-)sulfuric acid, H ₂ S ₂ O ₈	194.13	hygr cr.		d 65		d	d	d al
s560	peroximono-	Permonosulfuric acid, Caro's acid H ₂ SO ₅	114.07			d 45		d	d	d al, eth
s561	pyro-	H ₂ S ₂ O ₇	178.13	col cr, hygr	1.92 ⁰	35	d	∞	∞	s al, eth, ac a
s562	tetrahydrate	H ₂ SO ₄ ·4H ₂ O	170.13	in sol only	ca 1.03	-27		s	d	s bz, ac a
s563	Sulfurous acid	H ₂ SO ₃	82.07	col liq, 1.444	1.6674 ²⁰	-54.1	69.1	d	d	s al, CC ₄ ; sl s alk
s564	Sulfuryl chloride	SO ₂ Cl ₂	134.96	col gas	1.623 ⁰ g/l	-124.7	7.1	10 ⁹		d a
s565	chloride fluoride	SO ₂ ClF	118.51	col gas	gas 3.72 g/l	-136.7	-55.4	d	d	s HF, fus alk; i a
s566	fluoride	SO ₂ F ₂	102.06	col gas	liq 1.7	-39 to -37	152.5	d	d	
s567	pyro-, chloride	S ₂ O ₅ Cl ₂	215.02	col liq, 1.937 ²⁰	gas 9.6 g/l			i	i	
t1	Tantalum	Ta	180.9479	gray black hard metal, cub or powd	met 16.6 ²⁰ powd 14.401	2996	5425 ± 100			
t2	boride, di-	TaB ₂	202.57	yel cr.	11.15	3000(?)	348.8	d	d	s abs al, eth
t3	bromide	TaBr ₅	580.47	blk, cub	4.67	265	5500	i	i	sl s H ₂ SO ₄ , HF
t4	carbide	TaC	192.96	blk, cub	13.9	3880	242	d	d	s abs al, H ₂ SO ₄
t5	chloride, penta-	TaCl ₅	358.21	lt yel, vitr cr powd	3.68 ²⁷	216				s HF, eth
t6	fluoride	TaF ₅	275.94	col, tetrag, deliq	4.74	96.8	229.5	s	i	sl s aq reg, HF, HNO ₃
t7	nitride	TaN	194.95	br blk, amorph, hex	16.30	3360 ± 50		i	i	s fus KHSO ₄ , HF; i a
t8	oxide, pent-	Ta ₂ O ₅	441.89	col, rhomb	8.2	1872 ± 10		s	s	s alk, exc conc HNO ₃ ; i a
t9	oxide, pent- hydrate	Tantalic acid Ta ₂ O ₅ ·xH ₂ O		col gel						i a
t10	oxide, tetr-	Ta ₂ O ₄ (or TaO ₂)	425.89	dk gray powd		oxidizes >1300		i	i	al s HF + HNO ₃ ; i HCl
t11	sulfide	Ta ₂ S ₄ (or TaS ₂)	490.14	blk powd or cr				i	i	sl a dil a, HNO ₃ ; i abs al, acet, eth
t12	Telluric acid, ortho-	Te(OH) ₄ or H ₂ TeO ₄ ·2H ₂ O	229.64	wh, monoc pr	3.071	136		s	s	sl s dil a, HNO ₃ ; i abs al, acet, eth
t13	Telluric acid	Te(OH) ₄ or H ₆ TeO ₆	229.64	wh cub	3.158	136		s	s	s H ₂ SO ₄ ; HNO ₃ ; aq reg, KCN, KOH; i HCl, CS ₂
t14	Tellurium	Te	127.60 ± 3	br blk, amorph, 1.0025	6.00	449.5 ± 0.3	989.8 ± 3.8	i	i	s H ₂ SO ₄ ; HNO ₃ ; aq keg, KCN, KOH; i HCl, CS ₂
t15	Tellurium	Te	127.60 ± 3	rhomb silv wh met, 1.0025	6.25	452	1390	i	i	s eth; al s a; d NaOH
t16	bromide, di-	TeBr ₂	287.41	brn to gray grn, need, unstable		210	339	d		s eth, a tart a, NaOH
t17	bromide, tetra-	TeBr ₄	447.22	or cr	4.31 ¹⁵	380 ± 6	d 421	sl s	d	s min a, tart a; d NaOH
t18	chloride, di-	TeCl ₂	198.51	blk cr or amorph, unstable	7.05	209 ± 5	327	d	d	s HCl, bz, al, chl, CCl ₄ ; i CS ₂
t19	chloride, tetra	TeCl ₄	269.41	wh to yel cr, deliq	3.26 ¹⁸ 2.559 ²³²	224	380 ⁷⁶⁰	s d	s d	
t20	ethoxide	Te(OC ₂ H ₅) ₄	307.84			20	107-107.5 ⁵			d a, alk
t21	fluoride, hexa-	TeF ₆	241.59	col gas unpleas odor	sol 4.006-191 liq 2.56-36	-36	+35.5	d	d	
t22	fluoride, tetra-	TeF ₄	203.59	wh cr hygr		subl	>97	d	d	d al
t23	hydride	H ₂ Te	129.62	col gas pois	4.49	-48.9	-2.2 ⁷⁶⁰	v s	s	s alk, aq NH ₃ ; i Hl
t24	iodide, di-	TeI ₂	381.41	blk cr (exist ?)		subl		i	i	s HCl, hot HNO ₃ ; alk; i NH ₄ OH
t25	iodide, tetra-	TeI ₄	635.22	blk cr	5.403 ¹⁵	280		sl s	d	s dil a, H ₂ SO ₄ , KOH
t26	methoxide	Te(OCH ₃) ₄	251.74	solid			123-124			d conc HCl; s hot KOH; i a, al
t27	oxide, di-	Tellurite, TeO ₂	159.60	wh, tet or rhomb, 2.00, 2.18(Li), 2.35	tetr 5.67 ¹⁵ rhomb 5.91 ⁰	733	1245	i	i	i a; s alk sulf
t28	oxide, mon-	TeO	143.60	blk, amorph (exist ?)	5.682	d 370 (in CO ₂)	d	i	i	s H ₂ SO ₄ s a, NaOH; sl s NH ₄ OH; i al
t29	oxide, tri-	TeO ₃	175.60	α yel amorph β gray cr	α 5.0752 ¹⁰⁵ β 6.21	d 395		i	i	
t30	sulfide	TeS ₂	191.72	red-blk powd amorph (exist ?)				i		
t31	sulfoxide	TeSO ₃	207.66	deep red amorph wh flocks, indef not isolated	3.05	d 30 d 40	d	d	d	
t32	Tellurous acid	H ₂ TeO ₃ (?)	177.61					0.00067	d	