

700	ZEOLITE	19	...Volatizing
701	.Organic compound used to form zeolite	20	...Acid leaching
702	..Organic template used	21.1	.Rare earth metal (At. No. 21, 39, or 57-71)
703	...Mixed template	21.5	..Ion exchanging or liquid-liquid extracting
704	...Nitrogen containing	22	.Platinum group metal (Ru, Rh, Pd, Os, Ir, or Pt)
705	....Amine	23	.Group IB metal (Cu, Ag, or Au)
706	.....Cyclic	24	..Ion exchanging or liquid-liquid extracting
707	.....Hydroxyl	25	..Sorbing or magnetic separating
708	.....Diamine	26	..Flotation
709	.Seed used	27	..Leaching, washing, or dissolving
710	.Aging to induce zeolite formation from inorganic mixture	28	...Specified particle size
711	..With physical treatment	29	...With a cyanide compound
712	.Synthesized from naturally occurring product	30	....And pressurizing
713	.Isomorphic metal substitution	31	....And agitating
714	..Acid treatment	32	..With ammonia or ammonium containing compound
715	...Halogen containing acid	33	....Specified temperature
716	.With change of synthesized zeolite morphology	34	...Forming insoluble substance in liquid
717	..Physical treatment	35	....Forming oxide or carbonate
718	.Structure defined X-ray diffraction pattern	36	....Sulfating
1	TREATING MIXTURE TO OBTAIN METAL CONTAINING COMPOUND	37	....Sulfiding
2	.Radioactive metal (At. No. 84+ or radioactive isotope of another metal)	38	...Halogenating
3	..Actinide series metal (At. No. 89+)	39	....Specified temperature
4	...Removing cladding or coating from fuel element	40	....With chlorine gas or chlorinated water
5	...Fusing	41	...Sulfating
6	...Ion exchanging or sorbing	42	..Forming insoluble substance in liquid
7	....Organic synthetic resin	43	...Specified pH
8	...Liquid-liquid extracting	44	..Volatizing copper, silver, or gold
9	....Organo-nitrogen solvent	45	..Sulfating
10	....Organo-phosphorus solvent	46	..Halogenating
11	...Forming insoluble substance in liquid	47	..Desulfurizing or de-arsenating
12	....By coprecipitating with carrier	48	..Forming sulfide or matte
13	.....Carrier contains bismuth	49	.Group VIIB metal (Mn, Tc, or Re)
14	.....Carrier contains lanthanum	50	..Forming insoluble substance in liquid
15	....Forming compound containing plural metals or metal and ammonium	51	...Halogenating
16	....Forming peroxide (e.g., UO ₄ , etc.)	52	...Sulfating
17	....Carbonate leaching	53	.Group VIB metal (Cr, Mo, or W)
18	....Acid leaching	54	..Ion exchanging or liquid-liquid extracting
		55	..Forming insoluble substance in liquid
		56	...Ammoniating or nitrating
		57	...Sulfating

58	...Forming compound containing plural metals	88	..Volatizing
59	..Volatizing	89	.Group IVA metal (Ge, Sn, or Pb)
60	...As a compound containing chlorine	90	..Detinning
61	..Forming compound containing plural metals	91	...Treating with free halogen or hydrogen halide
62	.Group VB metal (V, Nb, or Ta)	92	..Forming insoluble substance in liquid
63	..Ion exchanging or liquid-liquid extracting	93	...Pressurizing or agitating during reaction
64	..From organic liquids	94	...Halogenating
65	..Forming insoluble substance in liquid	95	...Nitrating or sulfating
66	...Hydroxylating or hydrating	96	..Volatizing germanium or tin
67	..Ammoniating or sulfating	97	..Volatizing lead
68	..Leaching, washing, or dissolving	98	..Leaching, washing, or dissolving
69	.Group IVB metal (Ti, Zr, or Hf)	99	.Group IIB metal (Zn, Cd, or Hg)
70	..Ion exchanging or liquid-liquid extracting	100	..Ion exchanging or magnetic separating
71	..Forming compound containing plural metals	101	..Forming insoluble substance in liquid
72	...Halogen containing	102	...Agitating during reaction
73	..Separating Group IVB metals from each other	103	...Halogenating
74	..Utilizing fluidized bed	104	...Hydroxylating or hydrating
75	..Volatizing	105	...Carbonating
76	...Titanium, zirconium, or hafnium	106	...Sulfating
77	...Removing undesirable matter from vapor	107	..Volatizing zinc, cadmium, or mercury
78	...Specified physical form of feed solids	108	...Mixture contains lead
79	...Contacting feed solids with chlorine gas	109	..Leaching, washing, or dissolving
80	..Chemically converting for physical solid-solid separation	110	..Desulfurizing
81	..Treating with nitrogen or nitrogenous compound	111	.Group IIIA metal or beryllium (Al, Ga, In, Tl, or Be)
82	..Treating with sulfur or halogen containing acid	112	..Ion exchanging or liquid-liquid extracting
83	...Forming metallic iron or insoluble iron containing compound	113	..Magnetic separating
84	..Treating with compound containing alkali metal or alkaline earth metal	114	..Forming compound containing ammonium and metal
85	..Forming insoluble compound containing Group IVB metal	115	..Forming compound containing plural metals
86	..Dissolving or leaching of iron	116	...And halogen
87	.Group VA metal or arsenic (Sb, Bi, or As)	117	...And sulfur
		118.1	...Aluminosilicate other than zeolite
		119	...Alkali metal aluminate
		120	...From alunite
		121	...From bauxite
		122	..Forming insoluble substance in liquid
		123	...Subjecting mixture to pressure, vacuum, or steam
		124	...Agitating during reaction
		125	...Nitrating

126	...Halogenating	157.2	..Phosphate rock or ore
127	..Hydroxylating or hydrating	157.3	...Acid treatment
128	...Sulfating	157.4	....Sulfating
129	..Carbonating	157.5	..Phosphorous or phosphorous compound containing waste as feed
130	..Destroying or separating organic impurity		
131	..Leaching, washing, or dissolving	158	..Forming insoluble substance in liquid
132	...With acid	159	...Subjecting mixture to pressure, vacuum, or steam
133	..Volatizing	160	...Agitating during reaction
134	...Beryllium	161	...Specified particle size used or made
135	...Group IIIA metal	162	...Nitrating or ammoniating
136	....Utilizing elemental halogen as reactant	163	...Halogenating
137	..Utilizing carbon as reducing agent	164	...Hydroxylating or hydrating
138	..Iron group metal (Fe, Co, or Ni)	165	...Carbonating
139	..Ion exchanging or liquid-liquid extracting	166	...Sulfating
140	..Forming insoluble substance in liquid	167.1	..Treating asbestos
141	...Subjecting mixture to pressure, vacuum, or steam	168	..Mixing fuel with starting mixture
142	...Agitating during reaction	169	..Separating magnesium and calcium from each other (e.g., treating dolomite, etc.)
143	...Utilizing or forming nitrogenous compound	170	..Treating impure sulfate (e.g., barite, etc.)
144	....Carbonating, hydroxylating, or hydrating	171	...Calcining gypsum
145	....Sulfating	172	....With steam or at specified temperature
146	...Sulfating	173	..Treating impure carbonate (e.g., oyster shells, etc.)
147	....Halogenating, hydroxylating, or hydrating	174	...Forming calcium carbide
148	..Utilizing fluidized bed	175	...Calcining
149	..Volatizing iron, nickel, or cobalt	176	....Utilizing vacuum or steam
150.1	..Leaching, washing, or dissolving	177	....With agitating or at specified temperature
150.2	...Spent catalyst	178	..Mixture contains halogen or sulfur
150.3	...Treatment of iron containing waste mixture	179	..Alkali metal (Li, Na, K, Rb, or Cs)
150.4	...Treatment of matte or nodule	179.5	..Lithium
150.5	....Gas injected into mixture	180	..Decomposing amalgam or other alloy
150.6	....With electrolytic or magnetic separation	181	..Ion exchanging or liquid-liquid extracting
151	..Converting metal to magnetic form	182	..Regenerating solution
152	...At specified temperature	183	...Hydroxide solution
153	..Desulfurizing	184	..Forming insoluble substance in liquid
154	...At specified temperature	185	...Fluorinating or defluorinating
155	..Alkaline earth metal (Mg, Ca, Sr, or Ba)	186	...Carbonating
156	..Magnetic separating	187	....Utilizing or forming nitrogenous compound
157	..Ion exchanging or liquid-liquid extracting	188	....Subjecting mixture to pressure, vacuum, or steam

189	....Utilizing carbon dioxide as reactant	223	..Utilizing reactant containing arsenic, phosphorus, or boron
190	....Mixture contains metal chloride	224	..By oxidizing or burning component
191	....Halogenating	225	..By suspension of metal oxide or hydroxide particles in liquid
192	....Hydroxylating or hydrating	226	..Utilizing organic reactant
193	....Sulfating	227	...Phenolate or phenolic type
194	...Utilizing or forming nitrogenous compound	228	...Amine
195	...Subjecting mixture to pressure, vacuum, or steam	229	...Ethanolamine
196	...Agitating during reaction	230	..Utilizing solid sorbent, catalyst, or reactant
197	...Halogenating	231	...Iron oxide or hydroxide
198	...Hydroxylating or hydrating	232	..Utilizing carbonate as reactant
199	...Sulfating	233	...And regenerating reactant by incoming actifying gas
200	..Volatizing an alkali metal	234	..Utilizing ammonium or metal hydroxide solution
201	..Agitating during heating or reaction	235	.Nitrogen or nitrogenous component
202	..Treating with acid or acid salt	236	..Component also contains carbon (e.g., cyanogen, hydrogen cyanide, etc.)
203	..Subjecting mixture to pressure, vacuum, or steam	237	..Ammonia
204	...Mixture contains organic impurity	238	...Utilizing liquid as reactant
205	...Leaching or forming water soluble substance	239.1	..Utilizing solid sorbent, catalyst, or reactant
206.1	..Mixture contains organic or carbonaceous impurity	239.2	...Zeolite
206.2	...Alkali carbonate from trona	240 R	.Halogenous component
207	...Burning the impurity	241	..Free halogen
208	..Water leaching or forming water soluble substance	240 S	..Solid removal agent
209	..Carbonating	242.1	.Sulfur or sulfur containing component
210	MODIFYING OR REMOVING COMPONENT OF NORMALLY GASEOUS MIXTURE	242.2	..Utilizing reactant having organic portion to remove or modify sulfur or sulfur containing component
210.5	.Direct contact with molten material	242.3	...Organic acid
212	.Mixture is exhaust from internal-combustion engine	242.4	...Alcohol, arylhydroxide, or polyol
213.2	..Utilizing as solid sorbent, catalyst, or reactant a material containing a transition element	242.5	...Sugar
213.5	...Group VIII element	242.6	...Heterocyclic
213.7	...Including successive stage treatments to modify or remove a different component in each stage	242.7	...Amine
219	.Molecular oxygen or ozone component	243.01	..Utilizing aqueous reactant to remove or modify sulfur or sulfur containing component
220	.Carbon dioxide or hydrogen sulfide component	243.02	...And addition of gaseous reactant
221	..Utilizing thionate or thiosulfate as reactant	243.03	....Oxygen
222	..Reacting mixture with sulfur dioxide, sulfite, or bisulfite	243.04	...Ion separation step
		243.05	...With component added to inhibit corrosion or scaling of processing apparatus
		243.06	...Ammonium compound reactant

243.07	...Transition metal or compound thereof reactant	263	RARE EARTH COMPOUND (AT. NO. 21, 39, OR 57-71)
243.08	...Alkali or alkali earth compound reactant	264	CHANGING COLOR CHARACTERISTIC OF IMPURITY
243.09	....Sulfite	265	WITH ADDITIVE
243.1	....And additional ionic reactant	266	.For stabilizing crystal size or shape
243.11	...And subsequent reactive treatment to remove sulfur from spent reactant	267	.Including anticaking or antihygroscopic function
243.12	....Gaseous treatment	268	..Additive contains organic portion
244.01	..Utilizing solid reactant or catalyst to remove or modify sulfur or sulfur containing component	269 270 271	.Including corrosion inhibitor .For sulfur trioxide ..Additive contains metal, boron, or silicon
244.02	...Reactant or catalyst on support	272	.For hydrogen peroxide
244.03	....Carbonaceous support	273	..Additive contains metal, boron, or silicon
244.04	....Aluminosilicate support		
244.05	...Reactant added to fuel for reaction in gas mixture	274 275	.Coating or binder .Additive contains metal, boron, or silicon
244.06	...Transition metal or compound thereof reactant	276	BORON OR COMPOUND THEREOF
244.07	...Alkali or alkaline earth or compound reactant	277 278	.Oxygen containing ..Binary compound
244.08	....Carbonate	279	..Ternary compound containing metal or ammonium
244.09	...Catalyst		
244.1	....Transition metal or compound thereof catalyst	280	...Utilizing dissolved or liquid reactant
244.11	....Zeolite containing	281	....Peroxide
245.1	.Organic component	282	....Carbon containing
245.2	..Utilizing liquid reactant	283	..Ternary compound containing hydrogen
245.3	..By burning or catalytically combusting component	284	.Nitrogen and hydrogen containing
246	.Carbon monoxide component	285	..Ternary compound
247	..Utilizing solid sorbent, catalyst, or reactant	286	.Hydrogen and metal or ammonium containing
248	.Hydrogen component	287	..Utilizing halogen containing reactant
215.5	.Solid component		
249	RADIOACTIVE (AT. NO. 84+ OR RADIOACTIVE ISOTOPE OF ANOTHER ELEMENT)	288	..Utilizing oxygen containing reactant
250	.Transuranium compound	289	.Binary compound (e.g., boride, etc.)
251	..Plutonium containing	290	..Nitrogen containing
252	.Thorium compound	291	..Carbon containing
253	.Uranium compound	292	..Halogen containing
254	..Binary compound	293	...Fluorine
255	...Hydrogen containing	294	..Hydrogen containing
256	...Carbon containing	295	...By reacting metal hydride or organic derivative thereof
257	...Chlorine containing		
258	...Fluorine containing	296	...By reacting free hydrogen
259	....Tetrafluoride	297	..Refractory metal containing (Ti, V, Cr, Zr, Nb, Mo, Hf, Ta, or W)
260	...Oxygen containing		
261	....Dioxide		
262	INERT OR NOBLE GAS OR COMPOUND THEREOF	298	.Elemental boron

299	PHOSPHORUS OR COMPOUND THEREOF	335	..Silica
300	.Halogen containing	336	...By hydrolyzing vapor phase silicon compound
301	..Fluorine		
302	.Nitrogen containing	337	...By oxidizing volatile silicon compound (e.g., combustion, etc.)
303	.Sulfur containing		
304	.Oxygen containing		
305	..Metal or ammonium containing	338	...By gelling
306	...Plural metal or metal and ammonium containing	339	...By precipitating
		340	...By purifying sand
307	...Hydrogen containing	341	.Halogen containing
308	....Orthophosphate (e.g., calcium hydroxyapatite)	342	..Halogenated silane
309	.....Utilizing phosphoric acid or its anhydride as reactant	343	..Volatilizing a solid
		344	.Binary compound (e.g., silicide, etc.)
310	.....And ammonia	345	..Of carbon (i.e., silicon carbide)
311	...Orthophosphate		
312	...Alkali metal or ammonium containing	346	...By reacting vapor phase silicon compound with carbon or carbon containing compound
313	....Utilizing phosphoric acid as reactant	347	..Of hydrogen (e.g., silane, etc.)
314	...Metaphosphate		
315	...Triphosphate or tetraphosphate	348	.Elemental silicon
316	..Ternary compound containing hydrogen	349	..From silicon containing compound
317	...Orthophosphoric acid	350	...Utilizing reducing substance
318	...Utilizing reactant containing silicon or carbon	351	NITROGEN OR COMPOUND THEREOF (EXCEPT AMMONIUM SALT OF NON-NITROGEN ACID)
319	...Reacting an acid and phosphate rock	352	.Ammonia or ammonium hydroxide
320	.....Sulfuric acid	353	..From nitride of metal or silicon
321.1	....Purification or recovery		
321.2	....Organic solvent extraction	354	..And producing inorganic carbon and nitrogen containing compound
322	.Elemental phosphorus		
323	..Utilizing a phosphate as reactant	355	..By hydrolyzing inorganic carbon and nitrogen containing compound
324	SILICON OR COMPOUND THEREOF		
325	.Oxygen containing	356	..From ammonium compound
326	..Metal containing (i.e., silicate)	357	...Utilizing calcium compound
		358	..From organic material containing nitrogen
327.1	...Aluminum containing		
327.2	....Mullite	359	..From elemental hydrogen and nitrogen
328.1	....Aluminosilicate		
328.2	.....Crystalline		
328.3	.....Mica	360	...With exchanging heat between catalyst and synthesis or effluent gas
329.1	.....X-ray diffraction pattern		
330.1	.....Gelling or precipitation	361	...Utilizing plurality of catalyst beds or portions
331	..Alkaline earth metal containing (Mg, Ca, Sr, or Ba)	362	...Utilizing metal containing catalyst
332	..Alkali metal containing (Li, Na, K, Rb, or Cs)	363	....Alkali or alkaline earth metal
333	...By precipitating or gelling from silicate solution		
334	...By heat treating silica and the alkali metal	364	.Carbon containing
		365	..And oxygen containing (e.g., fulminate, cyanate, etc.)

366	..And sulfur containing (e.g., thiocyanate, etc.)	405	...Nitric oxide (NO)
367	..And iron containing (e.g., ferrocyanide, etc.)	406	.Binary compound
368	..Cyanamide radical containing	407	..Hydrazine or hydrazine hydrate
369	...And hydrogen containing	408	...Utilizing halogen or sulfur as reactant
370	...Utilizing carbide as reactant	409	..Metal or ammonium containing
371	..Ternary compound	410	...Azide
372	...Hydrogen cyanide	411	...Titanium or zirconium containing
373	....Employing formamide or formate as reactant	412	...Aluminum containing
374	....Utilizing nitric oxide or free nitrogen as reactant	413	.Hydrogen containing (e.g., amide, imide, etc.)
375	....Employing ammonia as reactant	414	CARBON OR COMPOUND THEREOF
376	.....And using catalyst	415.1	.Oxygen containing
377	....Utilizing metal cyanide as reactant	415.2	..Percarbonate compound
378	...Using cyanamide as reactant	416	..Carbonyl
379	...Utilizing hydrogen cyanide as reactant	417	...Metal containing
380	...Utilizing free nitrogen as reactant	418	....Utilizing organic compound as reactant
381	....And using catalyst	418.2	..Carbon monoxide
382	....Utilizing carbon reactant from specified source	419.1	..Carbonate or bicarbonate
383	..Halogen containing	420	...Ammonium containing
384	..Binary (e.g., cyanogen, etc.)	420.2	...Plural metal containing
385	.Oxygen containing	421	...Alkali metal containing (Li, Na, K, Rb, or Cs)
386	..Halogen containing	422	...Hydrogen containing (bicarbonate)
387	..Hydrogen containing	423	....By carbonating ammoniated brine
388	...Sulfur containing	424	....By reacting halogen containing compound
389	....Sulfamic acid	425	.....Sesquicarbonate
390.1	...Nitric acid	426	...Densifying soda ash
391	....By reacting a salt and an acid	427	...By reacting a bicarbonate
392	....Utilizing ammonia as reactant	428	...By reacting sulfur containing compound
393	....Utilizing nitrogen oxide as reactant	429	...By reacting halogen containing compound
394	....Nitrogen peroxide	430	..Alkaline earth metal containing (Mg, Ca, Sr, or Ba)
394.2	....Purification or recovery	431	...By reacting sulfur or halogen containing compound
395	..Nitrate	432	...By reacting oxide or hydroxide of the metal
396	..Ammonium containing	433	...Lead containing
397	...Utilizing ammonium or metal nitrate as reactant	434	....By reacting compound containing sulfur or a halogen
398	...Utilizing halogen containing reactant	435	....By reacting lead acetate or acetic acid
399	....And nitric acid reactant	436	....And utilizing metallic lead as reactant
400	..Binary compound (oxide of nitrogen)	437.1	..Carbon dioxide or carbonic acid
401	...Utilizing nitrosyl chloride as reactant	438	...From a carbonate
402	...Utilizing catalyst	437.2	...From carbon monoxide
403	....And ammonia as reactant		
404	.....Catalyst is metal oxide		

439	.Binary compound (e.g., carbide, etc.)	457	.....At least one radial inlet
440	..Refractory metal containing	458	....Gas or vapor only as infeed to process
441	..Calcium containing	449.9	...Liquid feed only
442	...By reacting carbon and inorganic calcium containing compound	459	...From carbon monoxide infeed to process
443	..Disulfide	460	..Treating carbon
444	...By reacting free carbon	461	..Recovery or purification
445 R	.Elemental carbon	445 B	..Fullerene (e.g., C60, C70, etc.)
446	..Diamond	462	HALOGEN OR COMPOUND THEREOF
447.1	..Fiber, fabric, or textile	463	.Plural metal or metal and ammonium containing
447.2	...Product	464	..Including fluorine
447.3	...From gaseous reactants	465	...Including aluminum
447.4	...Prior treatment before carbonization (except with gaseous oxygen)	466	.Plural diverse halogens containing
447.5	...With metal, metal compound, or phosphorus compound	467	.Sulfur containing
447.6	...Including reaction with gaseous oxygen	468	..Ternary compound containing oxygen
447.7	...In specific atmosphere (other than vacuum or air)	469	..Binary compound
447.8	...Controlling varying temperature or plural heating steps	470	.Ammonium halide
447.9	...Carbonizing cellulosic material	471	..Recovery or purification
448	..Graphite	472	.Ternary compound
449.1	..Carbon black (e.g., lampblack)	473	..Hypohalite or hypohalous acid
449.2	...Treating carbon black	474	...Calcium hypochlorite
449.3	....Treating with acid, or gas which forms acid in water	475	..Halogenate (e.g., chlorates, etc.)
449.4	....Halogen or compound thereof	476	..Perhalate or perhalic acid
449.5	....Gaseous oxygen containing compound	477	.Chlorine dioxide
449.6	...Utilizing synthetic polymer as reactant	478	..By reacting a chlorate
449.7	....Tire	479	...And a nitrogenous or carbonaceous compound
449.8	...Solid material in feed	480	...And sulfur dioxide
450	...Directly from fluid hydrocarbon only	481	.Hydrogen halide
451	....Rapid and discontinuous oxidation	482	..By reacting alkali metal salt with sulfuric acid
452	....Including flame impinging on cool surface	483	..Hydrogen fluoride
453	....By contacting with catalyst or hot solid surface	484	...From impure starting material
454	.....Hot particulate bed or reaction zone lining or refractory	485	....Fluorspar
455	....Specified injection velocity	486	..Utilizing an element as reactant
456	....Specified injection angle (e.g., helical, tangential, etc.)	487	...Reacting elemental hydrogen and elemental halogen
		488	..Recovery or purification
		489	.Binary fluorine containing compound
		490	..Alkali or alkaline earth metal containing
		491	.Binary compound containing metal
		492	..Refractory metal (Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, or W)
		493	..Iron group metal or copper (Fe, Co, Ni, or Cu)

494	..Group IVA metal (Ge, Sn, or Pb)	527	....Adding organic compound to mixture
495	..Group IIIA metal or beryllium (Al, Ga, In, Tl, or Be)	528	....Contacting mixture with gas, steam, or vapor
496	...Utilizing carbon or carbon containing compound	529	...Subjecting reactants to pressure, vacuum, or steam
497	..Alkaline earth metal (Mg, Ca, Sr, or Ba)	530	...Utilizing metal sulfate
498	...Anhydrous magnesium chloride	531	...Purifying acid or reactant
499.1	..Alkali metal	532	..Sulfur trioxide
499.2	...From carbonaceous compound	533	...Utilizing catalyst in reaction
499.3	...Lithium chloride	534	...Promoter or successive diverse catalysts
499.4	...Sodium chloride	535	...Catalyst contains oxygen, vanadium, and another metal
499.5	....Purification	536	...Platinum catalyst
500	.Elemental halogen	537	....With sulfate or asbestos carrier
501	..Ion exchanging or liquid-liquid extracting	538	...Oxygen containing catalyst
502	..Oxidizing catalytically	539	..Sulfur dioxide
503	..Sorbing	540	...From acid sludge or waste
504	..From mixture containing alkali metal or alkaline earth metal	541.1	...Utilizing metal sulfate as reactant
505	...Forming insoluble substance in liquid	541.4	...Ammonium sulfate
506	..By reacting alkali metal halide with sulfur compound	542	..Burning or roasting a sulfur compound
507	..By reacting hydrogen halide or ammonium halide	543	..Burning sulfur
508	SELENIUM OR TELLURIUM OR COMPOUND THEREOF	544	..Sulfate
509	.Binary compound	545	...Ammonium containing
510	.Elemental selenium or tellurium	546	....Utilizing thiocyanate as reactant
511	SULFUR OR COMPOUND THEREOF	547	...Employing sulfite or bisulfite as reactant
512.1	.Oxygen containing	548	...Using metal sulfate as reactant
513	..Persulfate	549	...Employing sulfuric acid as reactant
514	..Thiosulfate	550	....Ammonia from waste gas
515	..Dithionite	551	..Alkali metal containing (Li, Na, K, Rb, or Cs)
516	...Employing amalgam as reactant	552	...Utilizing chloride as reactant
517	..Metal and ammonium containing	553	...Dehydrating
518	..Plural metal containing	554	...Alkaline earth metal containing (Mg, Ca, Sr, or Ba)
519	..Bisulfite	555	...Calcium
519.2	..Sulfite	556	...Aluminum containing
520	...Bisulfate	557	...Copper containing
521	..Ternary compound containing hydrogen	558	...Iron containing
522	...Sulfuric acid	559	...Lead containing
523	....Nitrogenous impurity or utilizing nitrogenous catalyst or reactant	560	.Ternary compound containing hydrogen and metal (e.g., hydrosulfide, etc.)
524	....Lead chamber process	561.1	.Binary compound
525	....Starting material includes organic or carbonaceous impurity	562	..Polysulfide
526	....Utilizing pressure or vacuum on mixture		

- 563 ..Hydrogen sulfide
- 564 ...By catalytic reaction
- 565 ..Utilizing free sulfur as reactant
- 566 ..Utilizing sulfate or sulfuric acid as reactant
- 566.1 ..Sulfide of Cd, Zn, or Hg
- 566.2 ..Sulfide of alkali metal
- 566.3 ..Sulfide of alkaline earth metal
- 567.1 .Elemental sulfur
- 568 ..Chlorinating
- 569 ..Reducing sulfur dioxide by carbon containing material
- 570 ...Catalytic reaction
- 571 ..Reacting a sulfide
- 572 ...With steam to form hydrogen sulfide
- 573.1 ..Hydrogen sulfide
- 574.1With sulfur dioxide
- 574.2In inorganic liquid
- 575Utilizing organic solvent or absorbent
- 576Utilizing promotor containing silica or aluminum
- 576.2With specified procedure for sulfur recovery or specified conditions for producing sulfur in more recoverable form
- 576.4By reacting gaseous feed stream with liquid aqueous mixture
- 576.5Transition metal-containing mixture
- 576.6Chelated or sequestered transition metal
- 576.7Organic compound-containing
- 576.8By reacting gaseous feed with gas containing free oxygen
- 577 ..Reacting metal sulfide with sulfur dioxide
- 578.1 ..Purifying crude sulfur
- 578.2 ...From ore
- 578.4 ..From liquid or solid compound
- 579 **OXYGEN OR COMPOUND THEREOF**
- 580.1 .Water
- 580.2 ..Heavy water
- 581 .Superoxide or ozone
- 582 .Peroxide
- 583 ..Alkaline earth metal (Mg, Ca, Sr, or Ba)
- 584 ..Hydrogen
- 585 ...From persulfuric acid or persulfate
- 586 ...From inorganic peroxide
- 587 ...From organic reactant
- 588By oxidizing hydroquinone or anthraquinone
- 589Including dissolving reactant in ester containing solvent
- 590Including dissolving reactant in alcohol containing solvent
- 591 ...By oxidizing alcohol or hydrocarbon
- 592.1 .Metal containing
- 593.1 ..Plural metals or metal and ammonium containing
- 594.1 ...Iron (Fe) containing
- 594.2And alkali metal or alkaline earth metal containing
- 594.3 ...Nickel (Ni) containing
- 594.4And alkali metal or alkaline earth metal containing
- 594.5 ...Cobalt (Co) containing
- 594.6And alkali metal or alkaline earth metal containing
- 595 ...Chromium (e.g., chromate, etc.)
- 596And alkali metal, alkaline earth metal, or ammonium containing
- 597Dichromate
- 598 ...Titanium (e.g., titanate, etc.)
- 599 ...Manganese (e.g., manganate, etc.)
- 600 ...Aluminum (e.g., aluminate, etc.)
- 601 ...Arsenic (e.g., arsenite, etc.)
- 602Arsenate
- 603And lead containing
- 594.7 ...Bismuth or antimony containing (e.g., bismuthate, antimonate, etc.)
- 594.8 ...Vanadium, niobium, or tantalum containing (e.g., vanadate, niobate, tantalate, etc.)
- 594.9 ...Tin, lead, or germanium containing (e.g., stannate, plumbate, etc.)
- 594.12 ...Zirconium containing (e.g., zirconate, etc.)
- 594.13 ...Tungsten containing (e.g., tungstate, etc.)
- 594.14 ...Zinc, cadmium, or mercury containing (e.g., zincate, etc.)

- 594.15 ...Alkali metal containing (Li, Na, K, Rb, or Cs)
- 594.16 ...Alkaline earth metal containing (Mg, Ca, Sr, or Ba)
- 604 ..Group IB metal (Cu, Ag, or Au)
- 605 ..Group VIIB metal (Mn, Tc, or Re)
- 606 ..Group VIB metal (Cr, Mo, or W)
- 607 ...Chromium
- 608 ..Group IVB metal (Ti, Zr, or Hf)
- 609 ...Titanium monoxide or sesquioxide
- 610 ...Titanium dioxide
- 611Utilizing titanium halide as reactant
- 612Titanium tetrahalide
- 613Reacting with oxidizing gas
- 614In fluidized bed
- 615Utilizing titanium sulfate as reactant
- 616And utilizing acid
- 617 ..Group VA metal or arsenic (Sb, Bi, or As)
- 618 ..Group IVA metal (Ge, Sn, or Pb)
- 619 ...Lead
- 620Utilizing metallic lead as reactant
- 621Molten
- 622 ..Zinc
- 623 ..Volatilizing zinc
- 624 ..Group IIIA metal or beryllium (Al, Ga, In, Tl, or Be)
- 625 ...Aluminum
- 626Utilizing acid
- 627Reacting metallic aluminum with water or water vapor
- 628Forming catalyst, sorbent activated, or narrow pore alumina
- 629Hydroxide
- 630Utilizing carbon or compound thereof as reactant
- 631Utilizing nitrogenous compound as reactant
- 632 ..Iron
- 633 ...Ferric oxide
- 634Gamma form
- 635 ..Alkaline earth metal (Mg, Ca, Sr, or Ba)
- 636 ...Process of manufacturing
- 637Utilizing carbonate as reactant
- 638By reacting a sulfur containing compound
- 639By reacting a nitrogenous or halogenous compound
- 640By hydrating lime
- 641 ..Alkali metal (Li, Na, K, Rb, or Cs)
- 642 ...By reacting sulfur containing compound
- 643 ...By reacting a nitrogenous or halogenous compound
- 594.17 ..Vanadium (V), niobium (Nb), or tantalum (Ta) containing
- 594.18 ..Cadmium (Cd) or mercury (Hg) containing
- 594.19 ..Cobalt (Co) or nickel (Ni) containing
- 644 **HYDROGEN OR COMPOUND THEREOF**
- 645 .Binary compound
- 646 ..Alkali metal containing (Li, Na, K, Rb, or Cs)
- 647 ..Alkaline earth metal containing (Mg, Ca, Sr, or Ba)
- 647.7 .Deuterium-containing
- 648.1 .Elemental hydrogen
- 649 ..Ortho-para conversion
- 650 ..By decomposing hydrocarbon
- 651 ...Catalytic reaction
- 652Including decomposing water
- 653Catalyst substance contains nickel
- 654And another metal
- 655 ..By reacting water with carbon monoxide
- 656 ...Utilizing metal oxide catalyst
- 657 ..By reacting water or aqueous solution with metal or compound thereof
- 658 ...Iron
- 658.2 ..By direct decomposition of binary compound; e.g., chemical storage, etc.
- 658.3 ..By reaction of impurities in a stream containing elemental hydrogen
- 658.5 **EXTRACTING, LEACHING, OR DISSOLVING**
- 659 **MISCELLANEOUS PROCESS**
- FOREIGN ART COLLECTIONS**
- FOR 000 **CLASS-RELATED FOREIGN DOCUMENTS**

Any foreign patents or nonpatent literature from subclasses that have been reclassified have been transferred directly to the FOR Collection listed below. These Collections contain ONLY foreign patents or nonpatent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

OXYGEN OR COMPOUND THEREOF (423/579)

FOR 100 .Metal containing (423/592)
 FOR 101 ..Plural metals or metal and ammonium (423/593)
 FOR 102 ...Iron, cobalt, or nickel (e.g., ferrite, etc.) (423/594)

DIGESTS

DIG 1	WASTE ACID CONTAINING IRON	DIG 25	MORDENITE; E.G., NA-D, PTTILOLITE, ZEOLON
DIG 2	.Sulfuric acid	DIG 26	MAZZITE; E.G., ZSM-4, OMEGA
DIG 3	PAPERMAKING LIQUOR	DIG 27	BETA; E.G., NU-2
DIG 4	MANGANESE MARINE MODULES	DIG 28	LTL; E.G., BA-G, L, AG-1, AG-2, AG-4, BA-6
DIG 5	AUTOMATIC (INCLUDING COMPUTER) CONTROL	DIG 29	MEL; E.G., ZSM-11
DIG 6	TEMPERATURE CONTROL	DIG 30	ALPO AND SAPO
DIG 7	ISOTOPE SEPARATION	DIG 31	RHO; E.G., ECR-10, LZ-214
DIG 8	CORROSION OR DEPOSITION INHIBITING	DIG 32	SODALITE; E.G., HS, ULTRAMARINE
DIG 9	REACTION TECHNIQUES	DIG 33	MTW; E.G., ZSM-12, NU-13, CZH-5, TPZ-3
DIG 10	.Plasma energized	DIG 34	PENTASILS OTHER THAN MFI AND MEL; E.G., AZ-1, TZ-01, TZ-02, TRS, ZBM-10
DIG 11	.High pressure	DIG 35	TON; E.G., THETA-1, ISI-1, KZ-2, ZSM-22, NU-10
DIG 12	.Molten media	DIG 36	MTT; E.G., ZSM-23, ISI-1, KZ-1, EU-1, EU-4, EU-13
DIG 13	.Catalyst contact	DIG 37	LEV; E.G., LEVYNIK, ZMT-45, ZK-20, NU-3, LZ-132, LZ-133
DIG 14	.Ion exchange; chelation or liquid/liquid ion extraction	DIG 38	OFFRETITE; E.G., TMA OFFREITE
DIG 15	.Comminution	DIG 39	FULLERENE (E.G., C60, C70, ETC.) DERIVATIVE AND RELATED PROCESS
DIG 16	.Fluidization	DIG 40	FULLERENE COMPOSITION
DIG 17	.Microbiological reactions		
DIG 18	TREATING TRASH OR GARBAGE		
DIG 19	GEOHERMAL STEAM PURIFICATION		
DIG 21	FAUJASITE; E.G., X, Y, CZS-3, ECR-4, Z-14HS, VHP-R		
DIG 22	MFI; E.G., ZSM-5. SILICALITE, LZ-241		
DIG 23	FERRIERITE; E.G., SR-D ZSM-33		
DIG 24	LTA; E.G., A, ALPHA, ZK-4, ZK-21, ZK-22		