

TABLE 5.—Summary of geologic and commercial data for the principal talc districts of the United States

State and district	Form and size of talc body	Country rock and parent rock	Paragenetic sequence in alteration of parent rock to talc	Mineral composition and impurities	Physical and chemical characteristics of the commercial talc	Commercial use	Production through 1955, references, and remarks
California: Silver Lake-Yucca Grove..	Lenses, mainly of massive tremolite rocks, as much as 800 ft long, 20 ft thick, and 200-300 ft deep; schistose/talc rock forms layers and lenses 1 foot or more thick, mostly along the footwall.	Feldspar-quartz-diopside-carbonate hornfels, commonly separated from the talc body by phlogopite-feldspar-tremolite schist a few inches to several feet thick. Tremolite and talc apparently derived from beds of sedimentary dolomite 5-20 ft thick that form parts of pendants in bodies of granitic rock.	Dolomite → tremolite → talc.	Chiefly tremolite and talc with minor forsterite, serpentine, and carbonate. Impurities include phlogopite, chlorite, quartz, carbonate, and mafic dike rocks.	Tremolite rock mostly massive; talc rock commonly schistose.	Wall tile, pottery, rubber, insecticides.	About 320,000 tons (Wright, 1954; 1957).
Southern Death Valley-Kingston Range.	Tabular to lenticular bodies as much as 5,000 ft long, 80 ft thick, and 400 ft down dip; most are of schistose to massive talc rock, but some contain interlayered tremolite rock in various proportions, and some are entirely of tremolite rock.	Cherty and noncherty dolomite, diabase, and argillite, commonly silicified at the contact. In most deposits, one kind of rock forms the hanging wall, another the footwall. Talc and tremolite derived from generally massive and commonly cherty or siliceous beds of dolomite.	Carbonate + chert → tremolite → serpentine → talc. Intermediate steps in the process did not take place in many deposits.	Principally talc; tremolite mostly subordinate, but in places predominant. Impurities chiefly carbonate, iron oxide stains, and wallrock inclusions.	Talc rock blocky and massive to schistose or laminated. Tremolite rock massive to laminated. Particle shape acicular to platy.	Paint, ceramics, paper, textiles.	About 820,000 tons (Wright, 1957).
Inyo Range-Northern Panamint Range.	Small pods to lenses and tabular bodies as much as 500 ft long, 50 ft wide, and 400 ft down dip. Some bodies show large-scale variations related to differences in parent rock, permitting selective mining.	Primarily dolomite and quartzite, in a few places granitic rock and limestone. Talc derived principally from massive beds of dolomite and quartzite, locally from granite or diorite.	Dolomite and quartzite → talc; also granite and diorite → talc.	Chiefly talc; tremolite rare. Impurities generally very minor; chiefly chlorite, carbonate, quartz, pyrite, and iron oxide.	Talc rock mostly massive and blocky; ranging in color from dark gray to white or pale green; shows large-scale variations in color and texture.	Steatite, ceramics, cosmetics, pharmaceuticals, paints.	About 340,000 tons (Page, 1951; Wright, 1957).
Georgia: Chatsworth.....	Lenticular bodies as much as 5,000 ft long, 150 ft thick, and 300 ft down dip. Lenticular and spindle-shaped bodies of massive talc rock (crayon talc) are dispersed through talc-carbonate rock that shows large-scale variations in color, texture, and mineral composition.	Schist, slate, granite, and granite gneiss. Mode of origin doubtful; parent rock either sedimentary carbonate rock, mafic igneous or volcanic rock, or ultramafic igneous rock.	Probably: dolomite → serpentine → (chlorite) → talc. Possibly: ultramafic or mafic igneous rock → serpentine → (chlorite) → talc + carbonate.	Talc rock principally talc, minor magnetite; talc-carbonate rock chiefly talc and carbonate with minor magnetite, pyrite, chlorite, quartz, feldspar, actinolite, and sericite.	Talc rock varies from massive to schistose, translucent medium green. Talc-carbonate rock varies from medium to dark gray, and varies widely in texture and composition.	Crayons, cosmetics, paint, rubber, roofing, insecticides, lubricants, foundry facings, dusting agents.	Probably about 850,000 tons (Furcron and others, 1947).
Maryland.....	Irregular tabular masses adjacent to pegmatite dikes in serpentinite; irregular envelopes surrounding a serpentinite core; and lenticular masses.	Schist, gneiss, pegmatite, and serpentinite. Talc derived by replacement of parts or the whole of serpentinite bodies that vary widely in size.	Dunite and peridotite → serpentine → talc + carbonate.	Talc rock chiefly talc; impurities, chiefly chlorite, variable. Talc-carbonate rock essentially talc and carbonate, with chlorite, magnetite, serpentine, and other impurities.	Talc rock associated with pegmatites massive, fairly high in iron. Other talc rock and talc-carbonate rock commonly schistose.	Nonsteatite block talc, low-grade ground talcs.	About 320,000 tons (Pearre and Heyl, 1960, p. 795).
Montana: Dillon-Ennis.....	Small veins and pods to lenses as much as 700 ft long, 100 ft thick, and more than 200 ft in vertical extent.	Dolomite and quartz-mica schist. Talc derived from beds of dolomitic marble that range widely in size.	Dolomite → talc; also dolomite → tremolite → talc.	Essentially talc with minor amounts of impurities such as chlorite, graphite, dolomite, manganese and iron oxides, and inclusions of country rock.	Massive and blocky to schistose nearly pure talc; ranges in color from white to pale green and buff; particles range from subequant to flaky.	Steatite, possibly block steatite, cosmetics, paints, paper, ceramics.	About 200,000 tons (Perry, 1948).
Nevada: Palmetto-Oasis.....	Elongate zones of discontinuous pods and lenses to tabular masses more than 5-500 ft long; generally 1-15 ft, but as much as 50 ft, thick; and 140 ft down dip.	Chiefly dolomitic marble, hornfels, and diabase; locally granitic rock, phyllite, and schist; commonly one kind of rock forms the hanging wall, another kind the footwall. Talc derived chiefly from extensive beds of dolomitic marble and hornfels, but locally from phyllite, schist, and granitic rock; commonly occurs at fault contacts.	Chiefly: dolomite → talc. Locally: hornfels, granite, schist, and phyllite → talc.	Chiefly talc with minor chlorite and carbonate, locally some tremolite. Much of the material is nearly pure talc.	Massive to schistose talc rock, ranging in color from dark gray to pale green and white. Talc particles commonly finely platy.	Cosmetics, pharmaceuticals, paints, paper, insulators. Much probably suitable for steatite.	About 110,000 tons.
New Mexico: Hembrillo Canyon-San Andres Mountains.	Lenses as much as 300 ft long, 25 ft thick, and of undetermined depth.	Chiefly argillite; locally carbonate rock and silica-carbonate rock. Talc probably derived from extensive sedimentary units of argillite.	Not determined.....	Chiefly talc with minor chlorite; locally stained with iron oxide.	White to gray talc rock with platy particles.	Cosmetics. Some hand-sorted material probably suitable for steatite.	Probably less than 10,000 tons. Incorporated in White Sands Military Reservation and withdrawn from mining in 1942.
New York.....	Sheetlike to lenticular zones as much as several miles long and 300 ft wide.	Dolomitic and calcitic marble, diopside marble, and thin quartz-diopside layers. Talc derived chiefly from beds of dolomite and siliceous dolomite that form units as much as 5,000 ft thick and several miles long; some talc derived from granite, syenite, quartzite, and amphibolite.	Dolomite + quartz → diopside → tremolite → anthophyllite → serpentine → talc. One or more minerals may be omitted in the sequence.	The proportion of tremolite, anthophyllite, talc, and serpentine varies widely; any may predominate, but tremolite rock is most common. Quartz, carbonate, diopside, manganese and iron oxides, and gypsum are minor impurities.	Varieties of commercial talc range from schistose to massive. Particles range from nearly equant to bladed and fibrous. Very white.	Largely paint and ceramics; also rubber, insecticides, foundry facings, plastics, and other uses.	About 6,500,000 tons up to July 1961.
North Carolina: Murphy.....	Small pods to lenses as much as 700 ft long, 50 ft thick, and 200 ft down dip. Many deposits exhibit large-scale variations in color, texture, and distribution of impurities, permitting selective mining.	Calcite marble, locally highly siliceous and commonly tremolititic at the borders of the talc deposits.	Dolomite + quartz → silicated rock → talc.	Essentially talc. Impurities are chiefly minor amounts of quartz, carbonate, iron oxide stain, and rarely tremolite.	Massive to schistose talc rock, ranging in color from light gray to white. Particles subequant to flaky.	Crayons, cosmetics, paint, paper, textiles, ceramics; some suitable for steatite.	Probably more than 100,000 tons (Van Horn, 1948).
Texas: Allamore.....	Largely unknown, but some tabular masses are several thousand feet long and several hundred feet wide, with tabular and irregular inclusions of carbonate rock, phyllite, and masses of chert that range widely in size.	Cherty dolomite; some conglomerate, phyllite, and diabase. Talc probably derived from extensive beds of sedimentary or pyroclastic rock such as dolomitic marl or magnesium-rich tuff.	Not determined.....	Essentially talc. Impurities consist of varying amounts of chert, carbonate, wall rock inclusions, surface weathering products, and organic material.	No information.....	Chiefly wall tile; also insecticides.	120,000 tons through 1958 (King and Flawn, 1953; Flawn, 1958).
Llano.....	Mostly small lenses and pods in schist or along margins of serpentinite masses as much as 4 miles long and 1 mile wide.	Schist, gneiss, and serpentinite. Talc derived from lenticular bodies of serpentinite and from tabular and lenticular units of schist, gneiss, mafic volcanic rock, and carbonate rock.	Details unknown. Serpentinite and metamorphosed sedimentary and volcanic rock altered variously to one or more of talc, carbonate, tremolite, and anthophyllite.	Talc; talc and tremolite; talc and anthophyllite; anthophyllite. Commonly contains impurities of quartz, magnetite, chlorite, and other materials.	Variable in composition and physical properties. Small amounts of massive talc rock.	Chiefly low-grade uses. Some suitable for crayons and for carvings.	Production unknown, but very small (Dietrich and Lonsdale, 1958).
Vermont.....	Shell of talc rock 1-3 ft thick surrounds a zone of talc-carbonate rock that ranges in size from a shell 1-20 ft thick around a serpentinite core to the entire mass of the original serpentinite body.	Schist, greenstone, and serpentinite. Talc rock and talc-carbonate rock derived almost wholly from serpentinite bodies that range in size from small pods to lenses several miles long and a mile wide; a small proportion of the talc rock is derived from schist.	Dunite and peridotite → serpentinite. Serpentinite + CO ₂ → talc + carbonate. Serpentinite + SiO ₂ → talc. Schist or greenstone → talc + chlorite.	Talc rock is essentially talc with minor chlorite. Talc-carbonate rock essentially talc and magnetite with minor serpentine, magnetite, chlorite, and sulfides.	Talc rock generally schistose, talc-carbonate rock schistose to massive; both are medium to light gray. Talc ranges from fine to coarsely flaky.	Paper, rubber, textiles, paint, roofing, cosmetics, filler, foundry facings, crayons.	About 1,500,000 tons (Chidester and others, 1951, 1952a, b).
Virginia: Schuyler.....	Lenticular bodies of the same extent as the original igneous rock body.	Gneiss, schist, and amphibolite. The talc (soapstone) was derived from lenticular bodies, probably originally hypersthene gabbro, as much as 180 ft thick and 1,500 ft long.	Hypersthene gabbro → amphibole + chlorite → talc + carbonate.	Talc, chlorite, carbonate, amphibole, and magnetite.	Massive, felted texture.....	Sawed and shaped slabs, insecticides.	No reliable production figures available, but total production probably about 2 million tons, of which probably more than 80 percent was in sawed and shaped slabs (Hess, 1933a; Spence, 1940).