
Foil on Stamps on Foil and on Other Unusual Materials

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Dedicated to *Edgar Heilbronner* on the occasion of his 80th birthday

It is a great pleasure to participate in this tribute to Professor *Edgar Heilbronner*. He is a good friend for whom I have the highest regard for both his professional accomplishments and his personal qualities. We first met casually when I had a sabbatical year at the ETH in Zürich during 1957–58 and he was on the faculty. Much later we found that we shared the hobby of collecting stamps related to chemistry. That led to several joint publications on the subject, culminating in co-authorship of the book *A Philatelic Ramble through Chemistry* (*Verlag Helvetica Chimica Acta*/Wiley-VCH, 1998). I have been greatly impressed by his character, personality, breadth of knowledge, and achievements. His familiarity with American colloquialisms is amazing, and his sense of humor is delightful.

I have been retired for 20 years and do not have any scientific research to report. The most appropriate thing I can write on is some aspect of chemical philately. It is hoped that the reader will enjoy the following bit of atypically light reading for *Helvetica Chimica Acta*.

1. Postage Stamps on Metal Foil. – Because of my first name, *Foil*, the temptation to write an article about postage stamps which have been printed on metal foil is irresistible. It may surprise the reader to learn that there are hundreds and hundreds of them. They tie into chemistry by illustrating a philatelic use of several metallic elements, although it is a strange one. Most of these stamps were intended for sale to collectors, but two will be illustrated which were actually used for postage.

What kinds of metal foil have been employed? Aluminum was the first. Gold may not surprise you, but would you have guessed silver with its proclivity for tarnishing? Would you believe 0.001 inch steel? Tin foil? And – hold your hat – palladium? All have been used. As far as the author knows, all metal foil stamps have a paper backing which carries the adhesive. It is usually peelable and self-adhesive.

Hungary issued the first stamp on metal foil on 5 October 1955, followed by two stamps from the Soviet Union (USSR or CCCP) in 1961. All three were on aluminum and had conventional printing. The floodgates opened when Tonga issued its first stamps embossed on metal, a set of 13 on gold foil, on 15 July 1963. This was quickly followed by metal foil stamps from at least 29 other minor countries: Bhutan, Burundi, Cambodia, Cameroun, Central Africa, Chad, Comoro Islands, Congo, Dahomey, Equatorial Guinea, Fujeira, Gabon, Guinea, Guinea-Bissau, Haiti, Ivory Cast, Jordan, Laos, Madagascar, Mali, Mauritania, Niger, Qatar, Senegal, Sharjah, Sierra Leone, Togo, Umm al Qiwayn, and Upper Volta. The activity peaked in 1969–1970, went through a minimum in the late 1970s, and resumed again in the 1990s. More recent additions to the list are Angola, Antigua, Burkina Faso, Grenada, Grenada-Grenadines, Guyana, Jersey, Liberia, Maldive Islands, St. Vincent, and Tanzania. Thus at least 43 countries have had stamps on metal foil. All were minor countries except Hungary and the USSR. How many issues have there been? Equatorial Guinea

alone has had over 230 (mainly souvenir sheets). There have been well over 600 issues in all! Firms which specialized in embossing stamps on metal foil include *Walsall Security Printers* in England and *Boccard and Pierre Marrotte* in France.

A few representative examples will be shown. Anyone interested in the subject can obtain a much longer list by contacting the author. The illustrated stamps are numbered in bold square brackets, [xy], and are identified in a table at the end of the paper.

1.1. *Stamps on Aluminum Foil.* – The author knows of five stamps on aluminum. The first three were the first stamps on any kind of metal foil.

- [1] Hungary, 1955 (airmail), shows the *Matyas Rakosi Steel Mill* at Csepel. It publicizes the *Light Metal Industries International Congress* in Budapest, and commemorates 20 years of aluminum production in Hungary. Printed on aluminum foil.
- [2] USSR (CCCP), 1961, shows a rocket against a busy background. It commemorates Soviet space flights of 1961 and Soviet achievements in exploring outer space. Engraved on aluminum foil. Six days later this stamp was overprinted in red to commemorate the 22nd Congress of the Communist Party of the USSR. The overprinted version is not illustrated here because it is so similar to the original.
- [3] USSR, 1965. Publicizes *National Cosmonauts' Day*. Shows two rockets, a parabolic dish receiver, and a TV tower. Lithographed on aluminum foil.
- [4] USSR, 1965. Globe with trajectories, satellite, and two astronauts on the ground. Also lithographed on aluminum foil.



1.2. *Stamps on Gold Foil.* Literally hundreds of stamps and souvenir sheets have been printed on gold foil – far more than on any other metal. As already mentioned, Tonga issued the first ones in 1963, a set of 13 to commemorate the first gold coinage in Polynesia. They were round, with peelable paper backing, and came in various sizes. Stamp [5] is an example of the smallest and [6] of the largest. The stamps picture either the Queen of Tonga [5] or the coat of arms of the country [6] which appear on the obverse or reverse sides of the gold coins.



One more example is [7], a 1970 stamp from Upper Volta which pictures the Holy Family. It was used for postage on a package to the Northwestern University Library, where my son kindly obtained it for me. Unfortunately, the ink cancellation did not adhere to the metal, and there is now no proof that the stamp was actually used. I should not have removed it from the cover.

1.3. *Stamps on Silver Foil.* In spite of the fact that silver tarnishes if not protected, a modest number of stamps have been produced on it. Only two examples out of at least 40 are shown here. Stamp [8] is on a registered letter from Umm Al Qiwain, one of the seven emirates in the Persian Gulf area that now make up the United Arab Emirates. Stamp [9], from Sierra Leone, is embossed on silver foil in the shape of a cola nut and pictures a cola plant.

1.4. *Stamps on Steel Foil.* In 1969 Bhutan, that great steel-producing nation, issued 12 stamps concerning the history of steel-making. They were on tin-plated 0.001-inch steel foil and were printed by a firm in Minneapolis, Minnesota. As with many issues



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from Bhutan, these were never intended for postal use; they were to raise money from gullible collectors like me. Each stamp has a paper backing with the repeated inscription ‘.001 USS steel foil’. USS stands for *United States Steel Corporation*, a large company headquartered in Pittsburgh, Pennsylvania. Only two of the 12 stamps are illustrated here. Stamp [10] shows two men weighing a Damascus sword, and [11] pictures early beehive coke ovens.

1.5. *Stamps on Tin Foil*. Bolivia has had at least two souvenir sheets printed on tin foil laminated to paper. Shown here [12] is one issued in 1986 picturing three professional tennis players: *Boris Becker*, *Steffi Graf*, and *Guillermo Vilas*.



1.6. *Stamps on Palladium Foil*. Tonga, notable like Bhutan for its many unusual stamps, has issued 32 of them lithographed and embossed on palladium foil. (There are also many on gold.) The coronation of *King Taufa'ahau IV* took place on 4 July 1967, and on the same day the world's first palladium coinage was introduced in Tonga. The first 14 palladium stamps commemorate these events. They are round with scalloped edges, backed with inscribed paper, and of various diameters. They show either the coat of arms of the country as given on the reverse of the new palladium coins [13], or have a medallion with the face of the new king [14]. Only two are illustrated here because of their similarity. Stamp [13] is an example of the smallest size, and [14] is almost the largest. A year later, the same set of 14 stamps was overprinted in honor of the King's 50th birthday, and four additional air post official stamps were added.



It would cost a small fortune to acquire examples of all the stamps on metal foil, but a few of them make an interesting addition to a collection of stamps related to chemistry.

2. Stamps Printed on Other Unusual Materials. – Postage stamps have also been printed on other unusual materials, usually as a money-making gimmick. Examples are silk, woven polyester fiber, plastic film, waxed cloth, goldbeater's skin, cedar veneer, and scented paper.

2.1. *Silk Cloth.* a) In 1958, Poland issued a souvenir sheet printed on silk to mark the 400th anniversary of the Polish postal service [15]. It is imperforate, has no backing nor gum, and pictures a stagecoach.

b) In 1969, Bhutan published a set of five stamps printed on silk rayon (whatever that is) showing Buddhist prayer banners. Only one is illustrated here [16].

2.2. *Cloth Woven from Polyester Fiber.* a) In 1963, the Deutsche Demokratische Republik (DDR, or East Germany) issued an imperforate, un gummed souvenir sheet with no paper backing to honor 'Chemistry for Peace and Socialism' [17]. What better way to honor the contributions of chemistry than by using a synthetic polymer? The sheet is woven of polyester fibers and contains two imperforate stamps. One (50 pf) shows a woman and a row of laboratory distilling columns. The other (70 pf) pictures a chemical plant. Unfortunately, the material did not accept either perforations, gum, nor cancellation ink, so it was not a philatelic success. The *Scott* catalog does not assign it a number, but describes it in a footnote following #645. *Martin J. Frankevicz* wrote 'This was the first of a line of exotic gimmicks, such as self-adhesives, gold foil, and 3-Ds, that became part of philately in the early 1960s' (*Scott Stamp Monthly*, October 2000, p. 91).



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b) Switzerland introduced the first-ever embroidered stamp on 21 June 2000 [18]. It is made from 100% polyester thread, and is laminated to a peelable backing which protects the self-adhesive gum. Production of these stamps on embroidery machinery was a *tour de force* because of their small size compared to the usual work.

2.3. *Plastic Film and Sheets.* a) *Three-Dimensional (3D) Stamps.* Between 1967 and 1973, Bhutan issued a number of sets of stamps which used plastic to give either a textured or a three-dimensional appearance. Two 1971 sets are described as ‘*plastic heat-molded into three dimensions*’. The others are described as ‘*simulated three dimensions using a plastic overlay*’ (1967–1973). Stamp [19], showing an early Ford automobile, is an example of the latter type. It seems to have a prismatic-ribbed plastic



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overlay, and is considerably thicker than an ordinary stamp. The three-dimensional effect may not be evident in a reproduction, but it is quite impressive in the original stamps.

b) *Hologram Stamps*. After Austria's 1988 introduction of the first stamp containing a hologram, many others have followed. Stamp [20] from Canada is an example. The holographic effect may not be seen in the reproduction, but it pictures a globe with a superimposed map of Canada and a picture of the space shuttle.

The remaining stamps mentioned in this article are not illustrated because I do not have them.

c) *Phonograph Records*. Probably the world's strangest stamps are a set of seven issued by Bhutan on 18 April 1973 in the form of miniature phonograph records (*Scott* 152 and 152A–F). They play the national anthem and several folk songs, and give the history of the country. The diameter is either 69 or 100 mm. I am told that they really play, but that the sound is not very good.



2.4. *Other Materials.* a) *Goldbeater's Skin.* This is a tough, thin, transparent, resin-impregnated paper used mainly in gold-blocking on book bindings and illuminated manuscripts. The German Empire employed it in 1886 for high-value stamps intended for parcels. They were printed on the collodion surface, and then gum was applied on *top* of the ink. The idea was that affixing a stamp would effectively destroy it so that it could not be re-used. They were not sold to the public but were applied to the parcels by postal clerks after cash payment for the postage.

b) *Wood.* On 4 June 1986, Paraguay issued a souvenir sheet for airmail postage which was printed on cedar veneer laminated to self-adhesive paper. (Scott C645, 25 g.) It pictures the *Madonna* by *Albrecht Dürer*.

Identification of the Stamps Shown

No.	Country	Date (Year-Month-Day)	Denom.	Scott Catalog No.	Printed on
1	Hungary	55-10-05	5 fo	C167	Aluminum
2	USSR	61-10-17	1 r	2533	Aluminum
3	USSR	65-04-12	20 k	3022	Aluminum
4	USSR	65-04-12	20 k	3023	Aluminum
5	Tonga	63-07-15	2 sh	133	Gold
6	Tonga	63-07-15	2 sh 4 d	C5	Gold
7	Upper Volta	70-11-27	1000 fr	C87	Gold
8	Umm al Qiwain	65-xx-xx	3 d	None	Silver
9	Sierra Leone	65-12-17	5 c	314	Silver
10	Bhutan	69-06-02	5 ch	103A	Steel
11	Bhutan	69-06-02	45 ch	103C	Steel
12	Bolivia	86-xx-xx	1 million b	None	Tin
13	Tonga	67-07-04	28 s	179	Palladium
14	Tonga	67-07-04	15 s	178	Palladium
15	Poland	58-12-12	2.50 z	830	Silk
16	Bhutan	69-09-30	15 ch	105	Silk rayon.
17	DDR (East Germany)	63-03-12	50 and 70 pf	Note after #645	Woven polyester
18	Switzerland	00-06-21	5 fr	1075	Embroidered with polyester thread
19	Bhutan	71-05-20	5 ch	128A	Prismatic ribbed polymer film. 3D effect
20	Canada	92-10-01	42 c	1442	Hologram on plastic film

c) *Scent-Impregnated Paper*. There have been at least three issues on scented paper. 1) *Odor of Roses*. Bhutan, 30 January 1973, set of six picturing various kinds of roses (*Scott* 150,150A–E). 2) *Odor of Smoke*. Brazil, 1 August 1999, set of four self-adhesives on forest fires (*Scott* 2717a–d, 51c each). They show an anteater, a flower, a leaf, and a burnt tree trunk respectively. 3) *‘Heavily Scented’*. Singapore, 9 September 1998. Set of 8 on various kinds of flowers (*Scott* 862–869). Obviously, the odor is a transient property and will not reproduce when the stamp is duplicated.

This concludes our short foray into stamps printed on unusual materials. They have some interest to a chemical philatelist as novelties.

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