Example 1, the methylene blue in the part (circular area) irradiated with UV has almost disappeared, which means that remarkable photocatalyst effect was achieved. The methylene blue has disappeared more clearly in Example 1 than in Comparative Example 1. It is understood that this effect is caused by the difference in the amount of carried photocatalyst particles, or in other words, an increase in the amount of carried photocatalyst particles due to the anodizing process. Almost no change was observed in the methylene blue in Comparative Examples 2 and 3, which means that no photocatalyst effect was confirmed.

[0038] <<Tape peeling-off test>>

Regarding Example 1 and Comparative Examples 1 and 2, a tape peeling-off test was performed using the other surface, which was not irradiated with UV, of the surfaces of each sample to which the methylene blue was applied. A tape adopted was “Scotch (registered trademark), ultra-transparent tape S BH-18”, manufactured by 3M Japan Limited. The tape was cut into pieces, each of which has the size of 18 mm x 35 mm. Each piece was affixed to the surface using fingers and peeled immediately. After the catalyst particles colored by the methylene blue were peeled off together with the tape, the blue color in the corresponding part disappeared. The results are shown in Table 3. It is noted that X marks were made with a cutter knife to specify the tape affixed positions.

[0039] [Table 3]

CLAIMS

[Claim 1] A method of producing a carrier in which a large number of catalyst particles or adsorbent particles are carried on a surface of a metal base material made of aluminum or an aluminum alloy, the method comprising:

performing an etching process using an etchant containing iron chloride and an oxide on the surface of the metal base material made of aluminum or the aluminum alloy, to convert the surface to an uneven and rough surface;

performing an anodizing process on the uneven and rough surface of the metal base material, to form a porous coating along the uneven and rough surface; and

causing the large number of the catalyst particles or the adsorbent particles to be carried on the surface of the metal base material on which the porous coating is formed along the uneven and rough surface, wherein

the carrier includes a catalyst carrier and an adsorbent carrier.

[Claim 2] The method of producing the carrier according to claim 1, wherein

internal spaces of recesses at the uneven and rough surface are filled with the catalyst particles or the adsorbent particles, thereby carrying the catalyst particles or the adsorbent particles.

[Claim 3] A carrier in which a large number of catalyst particles or adsorbent particles are carried on a surface of a metal base material made of aluminum or an aluminum alloy, the carrier comprising:

an uneven and rough surface formed at the surface of the metal base material made of the aluminum or the aluminum alloy;

a porous coating formed along the uneven and rough surface; and

the large number of the catalyst particles or the adsorbent particles carried on the surface of the metal base material on which the porous coating is formed along the uneven and rough surface, wherein

the uneven and rough surface has a large number of recesses with regions each having a shape of a part of an original surface of the metal base material, and

the carrier includes a catalyst carrier and an adsorbent carrier.

[Claim 4] The carrier according to claim 3, wherein

internal spaces of the recesses at the uneven and rough surface are filled with the catalyst particles or the adsorbent particles, thereby carrying the catalyst particles or the adsorbent particles.