

WHAT IS CLAIMED IS:

1. A method for actuating a downhole device, the method comprising:
positioning a downhole device in a wellbore, the downhole device comprising a
5 reactive metal and a reaction-inducing fluid; wherein the reaction-inducing fluid is isolated
from the reactive metal;
removing the isolation of the reactive metal such that it reacts with the reaction-
inducing fluid to generate a hydrogen gas, and
actuating the downhole device with the hydrogen gas.
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2. The method of claim 1, wherein the downhole device is a setting tool, an inflow
control device, a gravel pack bypass, a sliding sleeve, a packer, an annular casing packer, a
frac plug, a bridge plug, or a tubing anchor.
- 15 3. The method of claim 1, wherein the removing the isolation of the reactive metal
comprises rupturing a rupture disc, opening a gate, opening a valve, degrading a coating on
the reactive metal, or any combination thereof.
4. The method of claim 1, wherein the actuating the downhole device comprises
20 applying pneumatic pressure to a surface.
5. The method of claim 4, wherein the surface is a surface of a piston.
6. The method of claim 1, wherein the reactive metal comprises a metal selected from
25 the group consisting of magnesium, calcium, aluminum, zinc, iron, potassium, sodium, and
any combination thereof.
7. The method of claim 1, wherein the reactive metal comprises a metal alloy selected
from the group consisting of magnesium-zinc, magnesium-aluminum, or calcium-magnesium
30 and any combination thereof.
8. The method of claim 1, wherein the reaction-inducing fluid comprises an aqueous
fluid.

9. The method of claim 8, wherein the aqueous fluid further comprises an acid.
10. The method of claim 9, wherein the acid is selected from the group consisting of citric acid, hydrochloric acid, succinic acid, sulfamic acid, adipic acid, lactic acid, and any combination thereof.
11. A downhole device for a wellbore, the downhole device comprising:
a reactive metal,
a reaction-inducing fluid, and
a check valve.
12. The downhole device of claim 11, wherein the downhole device is a setting tool, an inflow control device, a gravel pack bypass, a sliding sleeve, a packer, an annular casing packer, a frac plug, a bridge plug, or a tubing anchor.
13. The downhole device of claim 11, wherein the downhole device further comprises an isolation barrier comprising a rupture disc, a gate, a valve, a coating on the reactive metal, or any combination thereof.
14. The downhole device of claim 11, wherein the reactive metal comprises a metal selected from the group consisting of magnesium, calcium, aluminum, zinc, iron, potassium, sodium, and any combination thereof.
15. The downhole device of claim 11, wherein the reactive metal comprises a metal alloy selected from the group consisting of magnesium-zinc, magnesium-aluminum, or calcium-magnesium and any combination thereof.
16. The downhole device of claim 11, wherein the reaction-inducing fluid comprises an aqueous fluid.
17. The downhole device of claim 16, wherein the aqueous fluid further comprises an acid.
18. A system for isolating flow in a wellbore, the system comprising:

a downhole device comprising:

a reactive metal,

a reaction-inducing fluid, and

5 an isolation barrier isolating the reactive metal from the reaction-inducing fluid; and

a conduit disposed in the wellbore; wherein the downhole device is configured to control flow into and out of the conduit.

19. The system of claim 18, wherein the downhole device is a setting tool, an inflow
10 control device, a gravel pack bypass, a sliding sleeve, a packer, an annular casing packer, a frac plug, a bridge plug, or a tubing anchor.

20. The system of claim 18, wherein the reactive metal comprises a metal selected from
the group consisting of magnesium, calcium, aluminum, zinc, iron, potassium, sodium, and
15 any combination thereof.