Catalysts charging of an activated nickel foam catalyst is in general similar to other fixed bed catalysts. If the reaction is not sensitive to water, the catalyst can be transferred immediately to the reactor from the container it was weighted in. The amount of water in the reaction can be reduced and the excess water is removed before reactor charging. Excess water removal should be performed slowly via siphon behind a safety shield or in a fume hood. If the excess water is removed by a vacuum pump, then an in-line trap must be used. If necessary, use water to rinse out any catalyst stuck to the reactor wall during charging. Since catalyst deactivation can result from air oxidation, the catalyst must not be exposed to air during reactor charging.

The following steps can be followed to charge the most common commercial scale reactors:

1. The catalysts are stored under water. (Figure 1)
2. Remove safety valve first to avoid overpressure, then remove the drum lid. (Figure 2)
3. Replace the drum lid by a funnel and fix with a ring closure. (Figure 3)

4. It is recommended to do the emptying of the drums on the ground.

5. Now you can lift the drum for next steps. Be aware that you can’t carry the drums without a drum lip or a funnel. (Figure 4)

6. Carefully and quickly, pour the contents of the drum into the transfer container, with the funnel still in place. (Figure 5)

7. Rinse the empty drums with water.

8. Lift the transport container to position it above the reactor and discharge the contents into the reactor.

If the reaction is sensitive to water, then the water in the catalyst can be replaced with a suitable solvent. We would recommend replacing the water inside the reactor under inert conditions, then mix the solvent with the catalyst. Repeat this procedure to reach the desired water content. If the desired solvent is not miscible with water, then replace the water with a miscible water solvent and final solvent (e.g. ethanol).
This novel catalyst type is manufactured under a license from Alantum Europe GmbH.