

Technical Information

Testing of Sud-Chemie caps

Aim: To confirm the presence of a desiccant in the Sud-Chemie caps.

Method

Four Sud-Chemie caps were weighed before and after overnight drying at ~56°C. Caps were placed at room temperature after drying out (recharging) and weighed on a daily basis until a plateau in the weight was observed (saturation). Upon saturation, the process was repeated for another 3 cycles.

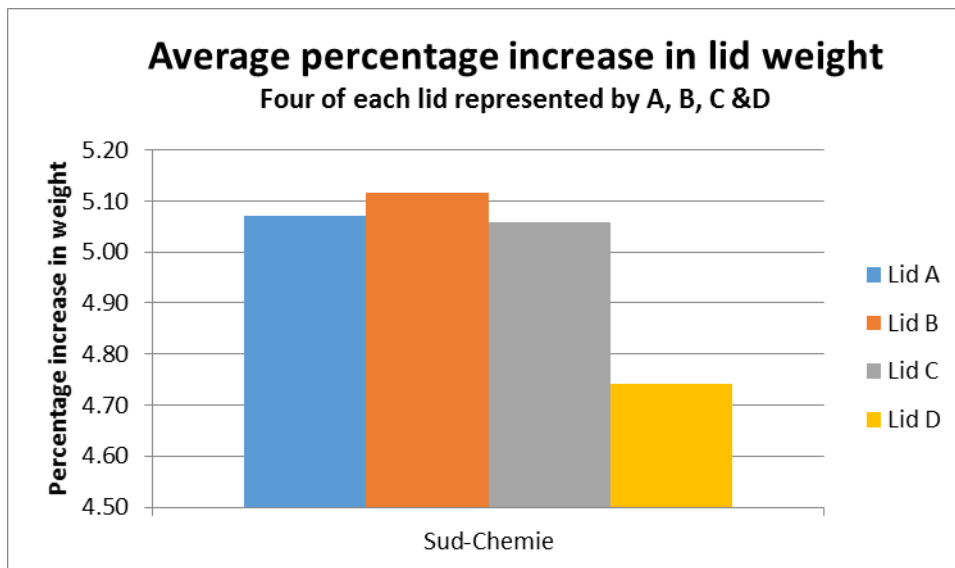
Results

At room temperature, all caps gain moisture when left at room temperature (Table 1, Figure 1), but return to approximately the same weight when recharged. (Table 1).

Table 1. Start weight (recharged) and end weight (saturated) of Sud-Chemie caps.

Replicate A	Start Weight (g)	End Weight (g)	Difference (g)	% Increase
Cycle 1	6.59	6.94	0.35	5.31
Cycle 2	6.64	6.91	0.27	4.07
Cycle 3	6.53	6.82	0.29	4.44
Cycle 4	6.5	6.92	0.42	6.46
			Average	5.07
Replicate B	Start Weight (g)	End Weight(g)	Difference	% Increase
Cycle 1	6.58	6.93	0.35	5.32
Cycle 2	6.62	6.9	0.28	4.23
Cycle 3	6.52	6.81	0.29	4.45
Cycle 4	6.49	6.91	0.42	6.47
			Average	5.12
Replicate C	Start Weight (g)	End Weight(g)	Difference	% Increase
Cycle 1	6.56	6.9	0.34	5.18
Cycle 2	6.6	6.87	0.27	4.09
Cycle 3	6.49	6.79	0.3	4.62
Cycle 4	6.47	6.88	0.41	6.34
			Average	5.06
Replicate D	Start Weight (g)	End Weight(g)	Difference	% Increase
Cycle 1	6.6	6.95	0.35	5.30
Cycle 2	6.63	6.91	0.28	4.22
Cycle 3	6.53	6.83	0.3	4.59
Cycle 4	6.61	6.93	0.32	4.84
			Average	4.74

Figure 1. The percentage increase in weight between fully recharged and saturated states of the Sud-Chemie lids.



Conclusion

The results in Table 1 confirm that the Sud-Chemie caps can absorb moisture from the environment, resulting in an increase in cap weight. The additional weight (moisture) can then be removed by incubation of the cap overnight at ~56°C. This indicates that within the cap there is a functioning desiccant with an average capacity to take up 0.33g of moisture.