

A Comparison of the Evaporative Emissions Performance of Light-Duty Vehicles under U.S. Tier 3 and China 6 Test Conditions

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Table S1. Diurnal evaporative emission comparison: U.S. EPA Tier 3 and China 6 Test Conditions.

Test Vehicle		U.S. EPA 2-day				
	Purge (L)	Hot Soak (g)	Day 1 (g)	Day 2 (g)	Maximum (Day1, Day2) (g)	Hot Soak + Diurnal (g)
A	308	0.034	0.127	0.093	0.127	0.161
B	No test	0.056	0.119	0.068	0.119	0.175
C	304	0.016	0.143	0.115	0.143	0.159
Average of Tier 3	306	0.035	0.130	0.092	0.130	0.165
D	170	0.028	0.305	0.426	0.426	0.454
E	No test	No test	No test	No test	No test	No test
Average of China 6	170	0.028	0.305	0.426	0.426	0.454
Test Vehicle		China 2-day 38C				
	Purge (L)	Hot Soak (g)	Day 1 (g)	Day 2 (g)	Maximum (Day1, Day2) (g)	Hot Soak + Diurnal (g)
A	331	0.090	0.143	0.102	0.143	0.233
B	No test	0.074	0.180	0.127	0.180	0.254
C	358	0.061	0.131	0.112	0.131	0.192
Average of Tier 3	334.5	0.075	0.151	0.113	0.151	0.226
D	253	0.083	0.175	0.155	0.175	0.258
E	No test	0.122	0.197	0.153	0.197	0.319
Average of China 6	253	0.103	0.186	0.154	0.186	0.289

Table S2. Canister BETP comparison: U.S. EPA Tier 3 and China 6 Test Conditions.

Test Vehicle		U.S. EPA BETP 25°C		
	Purge (L)	Day 1 (g)	Day 2 (g)	Maximum (Day1, Day2) (g)
A	292	0.007	0.008	0.008
B	No test	0.008	0.007	0.008
C	304	0.006	0.006	0.006
Average of Tier 3	298	0.007	0.007	0.007
D	170	0.319	0.336	0.336
E	No test	No test	No test	No test
Average of China 6	170	0.319	0.336	0.336
Test Vehicle		China BETP 25°C		
	Purge (L)	Day 1 (g)	Day 2 (g)	Maximum (Day1, Day2) (g)

A	289	0.008	0.007	0.008
B	No test	No test	No test	No test
C	205	0.004	0.008	0.008
Average of Tier 3	247	0.006	0.007	0.008
D	279	0.171	0.192	0.192
E	No test	0.089	0.103	0.103
Average of China 6	279	0.130	0.148	0.148

Table S3. Comparison of China 6 and U.S. Tier 3 hot soak and diurnal evaporative emissions certification values.

	Average (g)	Standard Deviation (g)	Minimum (g)	Maximum (g)
U.S. Tier 3 hot soak and diurnal	0.201	0.040	0.119	0.300
U.S. Tier 3 BETP	0.008	0.005	0.000	0.020
China 6 hot soak and diurnal	0.423	0.123	0.170	0.826

Table S4. Comparison of China 6 and U.S. Tier 3 hot soak and diurnal evaporative emissions certification values.

The reduction potential of evaporative emissions of Tier 3 vs. China 6 vehicles using the Pre-China 7 study		
2-day Evaporative Emissions (U.S. EPA Test Conditions)	Grams per Vehicle per Day Reduction	Percent reduction
Full Vehicle SHED	0.29	64%
Canister BETP	0.33	98%