

LPG end-users.

2. Were the sampling tests carried out by independent laboratory? Please provide the details of the laboratory. How many laboratories in HK can provide similar services?

The tests were carried out by an internationally-recognized testing organisation in Hong Kong under a term contract. It is noted that this organisation is currently the only recognized independent laboratory in Hong Kong providing the aforesaid services. Since the operation of the above organisation runs on commercial bases, we are unable to provide its information in this regard.

3. Apart from testing of the LPG quality by sampling at auto filling stations and terminals, do you have any other measures to ensure the quality of LPG in compliance with the required specification? Have you issued any instructions or guidelines to them for compliance?

LPG supply companies develop their own internal work procedures that can best meet the characteristics of their LPG sources and the design of their terminals (including water draining operations). EMSD has been conducting regular assessments of the LPG supply companies to monitor their internal work procedures in connection with the LPG supply chain, including receipt of LPG from tankers, storage at terminals, delivery by road tankers and storage at filling stations. Should there be any impropriety or offences under the Gas Safety Ordinance, EMSD will urge the LPG supply companies for improvement or follow up with these companies in accordance with the provisions of relevant regulations.

The assessments results show that all LPG supply companies have been implementing the suitable work procedures. We consider that the existing inspection and audit arrangement has been effective in monitoring LPG supply companies to strictly implement the relevant work procedures, so as to ensure LPG quality and proper LPG supply.

4. In 2012-13, any test results showed that the LPG quality did not complied with auto-LPG specification?

Laboratory test results of all the samples collected by EMSD from 62 filling stations and 5 terminals in 2012-13 showed that their LPG quality complied with auto-LPG specification.

In December 2012, Chevron stopped selling auto-LPG at their 4 LPG filling stations on 11 December 2012 as the LPG quality was found not complying with the auto-LPG specification in respect to the copper corrosion test after a sample quality test conducted by Chevron. EMSD carried out testing of the non-conformed LPG to verify its findings. EMSD has thoroughly reviewed Chevron's records in relation to its LPG operations and also conducted site inspections. EMSD did not found any non-compliance in respect of Chevron's in-house operation procedures. EMSD received Chevron's investigation report on the incident and accepted its findings, recognizing that the cause of this incident was connected with the barge carrying this batch of LPG cargo. After reviewing Chevron's investigation report and taking into consideration independent professional advice, EMSD confirmed that the LPG quality complied with the specification and agreed to re-opening of Chevron filling stations in Jan 2013. EMSD had enhanced measures to strengthen the monitoring of LPG quality. Moreover, EMSD had requested all LPG supply companies to review their monitoring procedures on the quality of imported LPG with a view to strengthening current practice.

5. What are the requirements of auto-LPG specification?

The auto-LPG specification is published on EMSD website.
AutoLPG Specification

Properties	Unit	Minimum	Maximum
Propane + Propylene	mol%	20	30
Butane + Butylene	mol%	70	80
Copper corrosion	-	-	Class 1
Total sulphur	ppm	-	200
Hydrogen sulphide	-	passed	
Evaporation residue #	mg/kg	-	100

1,3-butadiene	mol%	-	0.5
Vapour pressure	kPa	-	1550
Octane number	-	90	-

Remark :

The evaporation residue test according to ASTM D2158 (less than 0.05ml per 100ml and passing the oil stain observation test) was accepted as an equivalent requirement in 2001; the maximum value for O-number is set at 25 by the trade.