



11 August 2008

Autogas Installation Hose Information

EnergySafety published on 8 August 2008 a Prohibition Order that prevents or limits the use of hoses containing plasticisers that have a detrimental effect on autogas equipment, from 1 December 2008.

To assist industry in determining the length of hose that may be used on an autogas installation as a fuel line (possibly in combination with copper pipe) that will ensure compliance with the Order, EnergySafety has published the extraction data of hoses, as determined through testing. The list below also includes, for each hose, the maximum length of hose that can be installed on the vehicle to comply with the Prohibition Order (assuming this is the only hose used on a vehicle).

Should suppliers have hoses which are not included in the list and wish to have their hoses included, they should contact Mr C. de Groot at EnergySafety (email address cornelis.degroot@commerce.wa.gov.au). In order to have a hose added to the list, the supplier is required to provide EnergySafety with a completed and documented "Appendix N" test result. Details on the test can be found in Appendix N of the EnergySafety report located on this site under:

http://www.commerce.wa.gov.au/EnergySafety/Content/Regulation/Gas_installations/LPG-Autogas_users_important_up.html

If the hose that the supplier wishes to have listed meets (in practical application terms – see below) the limits set in the Prohibition Order and is compliant to AS/NZS 1869: *Hose and hose assemblies for liquefied petroleum gases (LP Gas), natural gas and town gas*, then it does not require any further approvals. It should be noted that the hose residue leach rate of class A chemicals will need to be below 50 mg/m to provide a practical application length.

If the hose meets the limits set in the Prohibition Order but still requires to be evaluated for compliance with AS/NZS1869, then the supplier may make a submission to EnergySafety requesting a temporary exemption from the requirements of AS/NZS1869 until the evaluation is completed. The submission needs to include a sample of the hose and a completed Appendix N test. EnergySafety may, if it is satisfied that the hose is fit for purpose, issue an exemption for use of that hose until 31 December 2008.

It is unlikely that this date will be extended or that any further exemptions will be given after this date, meaning that compliance with both the Prohibition Order and AS/NZS1869 will be required after 31 December 2008.

Summary of hose data provided by EnergySafety July 2009 Update Tested in accordance with Appendix N of the EnergySafety report

| Reference number | Supplier | Brand | Model | Total residue (mg/m) | Class A chemicals residue (mg/m) ⁴ | Maximum length allowed in metres to ensure that 25.0 mg of class A chemicals (per vehicle) is not exceeded ⁵ |
|------------------|-------------|-----------------|-----------------------------------|----------------------|---|---|
| 1 | Ausquip | Kingflex | 253 | 1945 | 1145 ¹ | 0.021 |
| 2a | Ausquip | Kingflex | VEX-8 Supplied post January 2009 | 12 | 7.7 | 3.25 |
| 2b | Ausquip | Kingflex | VEX-10 Supplied post January 2009 | 15 ² | 9.6 ² | 2.6 ² |
| 3 | Drivetrain | Weatherhead | H362 | 970 | 320 | 0.08 |
| 4 | Drivetrain | Weatherflex | WF740 | Less than 4 | Less than 1 | 25.0 |
| 5 | Earl's hose | Earl's hose NSW | Teflon/Stainless | Less than 2 | Less than 2 | 12.5 |
| 6 | Parker | Parker | 7955 | 120 | 50 | 0.5 |
| 7a | Pirtek | Synflex | 3833-05 T05 | 152 ³ | 5.6 ³ | 4.5 ³ |
| 7b | Pirtek | Synflex | 3833-06 AGH T06 | 190 | 7 | 3.6 |

Notes

- ¹Hose data measured by LPGA and published with the permission of Ausquip.
- ²Hose data measured on 8 mm hose, residue extraction rate on larger size increased due to dimensional difference by multiplying by 1.25. $1.25 \times 12 = 15$. For Class A chemicals it follows: $1.25 \times 7.7 = 9.6$. As a result the maximum length of the hose in 10 mm will be; $3.25 / 1.25 = 2.6$ m
- ³ Hose data measured on 10 mm hose, residue extraction rate on smaller size decreased due to dimensional difference by multiplying by 0.8. $0.8 \times 190 = 152$. For Class A chemicals it follows; $0.8 \times 7 = 5.6$. As a result the maximum length of the hose in 8 mm will be $3.6 / 0.8 = 4.5$.
- ⁴ Listed here are results of testing at 65 °C. Advice received from vehicle manufacturer's testing showed that the summer under-body vehicle temperature exceeds 75 to 90 degrees °C towards the front of the vehicle. The summer under-bonnet or engine bay temperature exceeds 120 degrees °C. Testing of hoses at 75 and 120 degrees °C indicates that the extraction rate is significantly higher and can be 6 times higher than the results from testing at 65 °C. Therefore careful consideration is required for use of flexible hoses in locations that are forward from the rear seats of vehicles and in particularly in the engine bay area.
- ⁵Only hoses numbers 1 and 3 do not have a practical, usable length.