



Secretariat

Distr.
GENERAL

ST/SG/AC.10/C.3/2005/55
13 September 2005

Original: ENGLISH

**COMMITTEE OF EXPERTS ON THE TRANSPORT OF
DANGEROUS GOODS AND ON THE GLOBALLY
HARMONIZED SYSTEM OF CLASSIFICATION
AND LABELLING OF CHEMICALS**

Sub-Committee of Experts on the
Transport of Dangerous Goods

Twenty-eighth session, 28 November-7 December 2005
Item 2 of the provisional agenda

TRANSPORT OF GASES

P200 filling ratio amendments

Transmitted by the expert from the United States of America

Introduction

1. During the discussions on the P200 filling ratios, the expert from the United States of America agreed to commission an independent study with the United States National Institute of Standards and Technology (NIST) to review the P200 filling ratio values on the basis of the filling criteria provided in P200. The values in P200 were initially based on values from 49 CFR and ADR. It was agreed that experts from Germany and the United States would collaborate along with any other interested parties to develop proposed recommendations for amending the filling ratios listed in P200 based on the results of the NIST study. Experts from Germany (BAM and PRB), the US DOT, the Compressed Gas Association (CGA) and NIST met from July 11-13, 2005 in Frankfurt, Germany for the purpose of reviewing the P200 filling ratio data.

2. The objectives of the working group were completed by meticulously reviewing the physical properties of approximately 125 individual gases and gas mixtures. The original NIST calculations verified that most of the P200 filling ratio values were adequate, but indicated that a number of values could either be replaced with higher values or should be lowered due to safety concerns. The group decided more work was necessary to verify the data for increasing a number of values and this should be subject to a future proposal. However, the group agreed that for those entries requiring lower filling ratio values as identified by the NIST calculations amendments should be addressed immediately in the interest of safety. These amendments are identified in Table 1 of this proposal.

Proposal

3. Amend P200 filling ratio values as identified in Table 1.

Table 1: Filling ratio amendments based on NIST data and review by the Frankfurt working group

UN #	Name	Ptest (bar) UN, abs.	Current filling ratio UN	<i>Amend Filling Ratio Values in the 14th revised edition</i>	% Difference
1020	Chloropentafluoroethane (R115)	26	1.08	1.05	-3
1048	Hydrogen bromide	61	1.54	1.51	-2
1973	R502	32	1.05	1.01	-4
1976	Octafluorocyclobutane (RC318)	12	1.34	1.32	-1.5
1982	Tetrafluoromethane (R14)	301	0.94	0.90	-4
2035	1,1,1-trifluoroethane (R143a)	36	0.75	0.73	-3
2192	Germane	251	1.02	1.00	-2
2198	Phosphorous pentafluoride	301	1.34	1.25	-7
2424	Octafluoropropane (R218)	26	1.09	1.04	-5
2599	R503	43	0.20	0.17	-18
2599	R503	101	0.66	0.64	-3

Note: % Diff = $100(\text{NIST}-\text{UN})/\text{NIST}$, so a (-) negative number indicates that the filling ratio computed by NIST is lower than the Table 200 of UN.