INTERNATIONAL STANDARD

ISO 14951-6

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Space systems — Fluid characteristics —

Part 6:
Monomethylhydrazine propellant

Systèmes spatiaux — Caractéristiques des fluides —

Partie 6: Monométhylhydrazine carburant

Reference number
ISO 14951-6:1999(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 14951-6 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

ISO 14951 consists of the following parts, under the general title *Space systems — Fluid characteristics*:

— *Part 1: Oxygen*

— *Part 2: Hydrogen propellant*

— *Part 3: Nitrogen*

— *Part 4: Helium*

— *Part 5: Nitrogen tetroxide propellant*

— *Part 6: Monomethylhydrazine propellant*

— *Part 7: Hydrazine propellant*

— *Part 8: Kerosene propellant*

— *Part 9: Argon*

— *Part 10: Water*

— *Part 11: Ammonia*

— *Part 12: Carbon dioxide*

— *Part 13: Breathing air*

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Space systems — Fluid characteristics —

Part 6:
Monomethylhydrazine propellant

1 Scope

This part of ISO 14951 specifies limits for the composition of monomethylhydrazine ($N_2H_3CH_3$) (MMH) propellant and test methods for verification of propellant composition. This part of ISO 14951 is applicable to monomethylhydrazine propellant of the following grades, intended for use as a fuel in propellant systems of space systems:

— grade A: 98,0 % pure;

— grade F: 98,5 % pure.

This part of ISO 14951 is applicable to propellant used in both flight hardware and ground facilities, systems, and equipment. It is applicable to influents only to the extent specified herein.

CAUTION — Monomethylhydrazine, in the liquid or vapour form, is toxic and volatile. Care should be taken in the handling and storage of monomethylhydrazine to prevent contact with the human body and with materials that are not compatible.

2 Term and definition

For the purposes of this part of ISO 14951, the following term and definition apply.

2.1
particulate
undissolved solids retained on a filter paper with a 10 µm nominal and 40 µm absolute rating

3 Composition

The composition of MMH propellant delivered to the flight vehicle interface shall be in accordance with the limits given in Table 1 when tested in accordance with the applicable test methods.

4 Qualitative properties

The propellant shall be a homogeneous liquid when examined visually by transmitted light.

5 Test methods

5.1 Sampling

The propellant should be selected in accordance with a sampling plan that will produce results with sensitivities and accuracies equivalent to or better than those required to meet the programme or project requirements.

5.2 Composition tests

The composition of the propellant shall be tested by such methods, apparatus, or analyzers as may be required to produce results with the sensitivities and accuracies necessary to meet programme or project requirements.

Table 1 — Composition limits

Composition		Limits	
		Grade A	Grade F
Monomethylhydrazine assay	mass fraction, %, min.	98,0	98,5
Water	mass fraction, %, max.	2,0	0,5
Particulate	mg/l, max.	10	10
Natrium	µg/g, max.	—	2
NH_3	mass fraction, %, max.	—	0,2
Monomethylamine	mass fraction, %, max.	—	0,3