

सड़क वाहन — संपीड़ित प्राकृतिक गैस
(सीएनजी)/जैव-संपीड़ित प्राकृतिक गैस
(जैव-सीएनजी)/द्रवित पेट्रोलियम गैस
(एलपीजी) — ईंधन प्रणाली के घटक —
सीट, सोफासाजी, छत और साइड लाइनिंग
के लिए अग्नि मंदक

(पहला पुनरीक्षण)

Road Vehicles — Compressed
Natural Gas (CNG)/Bio-Compressed
Natural Gas (Bio-CNG)/Liquefied
Petroleum Gas (LPG) — Fuel
System Components — Fire
Retardant Material for Seat,
Upholstery, Roof and Side Lining

(First Revision)

ICS 43.060.40

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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Automotive Vehicles Running on Non-Conventional Energy Sources Sectional Committee had been approved by the Transport Engineering Division Council.

This standard was first published in 2006 to specify definitions, test methods and requirements of fire-retardant material for seat, upholstery, roof and side lining of CNG onboard fuel system components, intended for use on motor vehicles defined in IS 14272. Later on through an amendment published in 2012, the scope of this standard was extended to LPG on board fuel system components along with some other changes. This version of the standard incorporates the content of the amendment issued to the standard in 2012. In this revision, bio-CNG is also added to the scope of this standard keeping in view the technological advancements that have taken place since its last publication.

In the formulation of this standard considerable assistance has been derived from the following AIS Standards issued by the Automotive Research Association of India:

AIS 024 (Rev. 1) (Part A) — Safety and procedural requirements for type approval of gaseous fuelled vehicles — Part A (Automotive application)

AIS 024 (Rev. 1) (Part B) — Safety and procedural requirements for type approval of gaseous fuel agricultural tractors — Part B (Agricultural tractors application)

AIS 024 (Rev. 1) (Part C) — Safety and procedural requirements for type approval of gaseous fuel vehicles — Part C (CEV's application)

AIS-025 (Version 3) — Safety and procedural requirements for type approval of LPG operated vehicles

AIS 026 (Version 3) — Code of Practice for use of LPG Fuel in internal combustion engine to power 4 wheeled vehicles and heavy motor vehicles

AIS 027 (Version 3) — Code of practice for use of LPG fuel in internal combustion engine to power 2 & 3 wheeled vehicles

AIS 028 (Rev.1) (Part A) — Code of practice for use of gaseous fuels in internal combustion engine vehicles — Part A (Automotive application)

AIS 028 (Rev. 1) (Part B) — Code of practice for use of gaseous fuels in internal combustion engine agricultural tractors — Part B (Agricultural tractors application)

AIS 028 (Rev. 1) (Part C) — Code of practice for use of gaseous fuels in internal combustion engine construction equipment vehicles (CEV's) — Part C (CEV's application)

This standard is one of the series of Indian Standards published on CNG/Bio-CNG/LPG onboard fuel system components. Other standards in the series are:

<i>IS No.</i>	<i>Title</i>
IS 15710 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) fuel system components — General requirements and definitions
IS 15711 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) fuel system components — Performance and general test methods (<i>first revision</i>)
IS 15712 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) fuel system components — Automatic valve (solenoid valve) (<i>first revision</i>)

[\(Continued on third cover\)](#)

Indian Standard

ROAD VEHICLES — COMPRESSED NATURAL GAS (CNG)/ BIO-COMPRESSED NATURAL GAS (BIO-CNG)/LIQUEFIED PETROLEUM GAS (LPG) FUEL SYSTEM COMPONENTS — FIRE RETARDANT MATERIAL FOR SEAT, UPHOLSTERY, ROOF AND SIDE LINING

*(First Revision)***1 SCOPE**

1.1 This standard specifies definitions, test methods and requirements of fire retardant material for seat, upholstery, roof and side lining of CNG/bio-CNG/LPG onboard fuel system components, intended for use on motor vehicles defined in IS 14272.

1.1.1 This standard is applicable to CNG/bio-CNG/LPG fuel system components intended to be used on vehicles using compressed natural gas/bio-compressed natural gas/liquefied petroleum gas in accordance with IS 15320-1 (mono-fuel or bi-fuel applications or dual fuel applications).

1.1.2 This standard is not applicable to the following:

- a) Liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer;
- b) Fuel containers;
- c) Stationary gas engines;
- d) CNG/bio-CNG/LPG fuel systems components for the propulsion of marine craft; and
- e) Hydrogen natural gas blend (HCNG) fuel system components

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of

these standards:

<i>IS No.</i>	<i>Title</i>
IS 14272 : 2011	Automotive vehicles — Types — Terminology
IS 15061 : 2002	Automotive vehicles — Flammability requirements
IS 15710 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) fuel system components — General requirements and definitions

3 DEFINITIONS

For the purpose of this standard definitions given in IS 15710 shall apply.

4 TESTS

Seat, upholstery, roof and side lining shall be made up of fire-retardant material conforming to **3.2** and **4.1** of IS 15061.

5 MARKING

5.1 The fire retardant material for seat, upholstery, roof and side lining shall be permanently marked with:

- a) Manufacturers name, trade-mark or symbol; and
- b) Part No. or unique identification mark.

5.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the

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Bureau of Indian Standards Act, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

6 TECHNICAL INFORMATION TO BE SUBMITTED BY THE COMPONENT MANUFACTURER

Technical information to be submitted by the component manufacturer for component type approval/type test shall contain at least following technical information:

- a) Name of the manufacturer;
- b) Manufacturing plant address;
- c) Vehicle manufacturers part No. for which the material is intended for use;
- d) Make and model of the vehicle for which the material is intended for use;
- e) Manufacturing date and batch number;
- f) Type and grade; and

- g) Identification code number (if any allotted by the supplier/trader)

7 CHANGES IN TECHNICAL SPECIFICATIONS OF A TYPE APPROVED COMPONENT AND EXTENSION OF APPROVAL

Any modification in technical specification of already type approved component shall require re-type test/extension of approval at the discretion of certifying agency, based on the justification provided by the component manufacturer and reviewed by the certification authority which has granted type approval.

8 NUMBER OF SAMPLES FOR TESTING

Minimum 5 numbers of cut pieces of the test material of size 356 mm (L) × 100 mm (W) × thickness not more than 13 mm. Also specify original thickness from which the sample is cut.

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Automotive Vehicles Running on Non-Conventional Energy Sources Sectional Committee, TED 26

<i>Organization</i>	<i>Representative(s)</i>
Automotive Research Association of India (ARAI), Pune	DR S. S. THIPSE (Chairperson) SHRI A. D. DEKATE
A B Process Technologies, Pune	SHRI KUNAL CHOPDE
Ashok Leyland Ltd, Chennai	SHRIMATI SUCHISMITA C. SHRI MUTHUKUMAR N. (<i>Alternate</i>)
Automotive Component Manufactures Association of India, New Delhi	SHRI SANJAY TANK MISS SEEMA BABAL (<i>Alternate</i>)
Bajaj Auto Ltd, Pune	SHRI MILIND J. PAGARE SHRI ARVIND V. KUMBHAR (<i>Alternate</i>)
Bosch Limited, Bengaluru	SHRI BHARADWAJ M. KRISHNAMURTHY SHRI VIKRAM K. (<i>Alternate</i>)
Central Institute of Road Transport, Pune	SHRI SAMIR SATTIGERI SHRI V. V. JOSHI (<i>Alternate</i>)
Central Pollution Control Board, New Delhi	SHRI A. SUDHAKAR SHRI SUNEEL DAVE (<i>Alternate I</i>) SHRI KEDARNATH DAS (<i>Alternate II</i>)
CLH Gaseous Fuel Applications Ltd, Gurugram	SHRI SHISHIR AGRAWAL SHRI GAGAN AGRAWAL (<i>Alternate</i>)
Delhi Transport Corporation, New Delhi	SHRI VIKAS BATRA
GAIL (India) Limited, New Delhi	SHRI ASHISH KUMAR MITTAL SHRI LOKESH MEHTA (<i>Alternate</i>)
Indian Auto LPG Coalition, Faridabad	SHRI SHISHIR AGRAWAL SHRI SUYASH GUPTA (<i>Alternate</i>)
Indian Institute of Petroleum, Dehradun	SHRI WITTISON KAMEI SHRI ROBINDRO LAIRENLAKPAM (<i>Alternate</i>)
Indian Institute of Science, Bengaluru	PROF R.V. RAVIKRISHNA
Indian Institute of Technology Ropar, Rupnagar	SHRI DHIRAJ KUMAR MAHAJAN DR DEBAPRASAD MANDAL (<i>Alternate</i>)
Indian Oil Corporation Ltd, (R & D Centre), Faridabad	DR M. SITHANANTHAN
Indian Rubber Manufacturers Research Association, Thane, Mumbai	DR K. RAJ KUMAR DR BHARAT KAPGATE (<i>Alternate</i>)
International Centre for Automotive Technology (ICAT), Manesar	SHRI VAIBHAV PRASHANT YADAV SHRI VIJAYANTA AHUJA (<i>Alternate</i>)
Mahindra & Mahindra Ltd, Mumbai	SHRI RAJAMANI PARTHIBAN SHRI SHAILESH KULKARNI (<i>Alternate</i>)

IS 15721 : 2024

<i>Organization</i>	<i>Representative(s)</i>
Mahindra & Mahindra Ltd (Truck and Bus Division), Pune	SHRI V. G. KULKARNI
Maruti Suzuki India Limited, Gurugram	SHRI GURURAJ RAVI SHRI ARUN KUMAR (<i>Alternate</i>)
Minda Emer Technologies Limited, Gurugram	SHRI VIVEK JAIN SHRI BIBHUTI KUMAR (<i>Alternate</i>)
Ministry of New and Renewable Energy, New Delhi	SHRI DIPESH PHERWANI
Petroleum and Explosive Safety Organization, Nagpur	SHRI D. K. GUPTA SHRI VIVEK KUMAR (<i>Alternate</i>)
Petronet LNG Ltd, New Delhi	SHRI PANKAJ WADHWA (<i>Alternate</i>)
Prodair Air Products India Private Ltd, Pune	SHRI RAVI SUBRAMANIAN SHRI ARUN KURUVANGATTIL (<i>Alternate</i>)
Renault India Private Limited, Mumbai	SHRI RAJENDRA KHILE SHRI VIJAY DINAKARAN (<i>Alternate</i>)
Rohan BRC Gas Equipment Pvt Ltd, Ahmedabad	SHRI STEFANO DE CAROLIS SHRI PARTHIV SHUKLA (<i>Alternate</i>)
Society of Indian Automobile Manufacturers, New Delhi	SHRI P. K. BANERJEE DR SANDEEP GARG (<i>Alternate</i>)
Swagelok – Bombay Fluid System components Pvt Ltd, Mumbai	SHRI SACHIN KOULGI SHRI HARISH TAKKE (<i>Alternate</i>)
Tata Motors Ltd, Pune	SHRI P. S. GOWRISHANKAR SHRI SHAILENDRA DEWANGAN (<i>Alternate</i>)
TVS Motor Company Ltd, Hosur	SHRI V. PATTABIRAMAN SHRI K. M. SRIKANTH (<i>Alternate</i>)
Vanaz Engineers Ltd, Pune	SHRI S. J. VISPUTE SHRI J. S. DHUMAL (<i>Alternate</i>)
Volkswagen India Pvt Ltd, Mumbai	SHRI JOREG BOUZEK SHRI PANKAJ GUPTA (<i>Alternate</i>)
BIS Directorate General	SHRI DEEPAK AGARWAL, SCIENTIST 'F'/ SENIOR DIRECTOR AND HEAD (TRANSPORT ENGINEERING) [REPRESENTING DIRECTOR GENERAL (<i>Ex-officio</i>)]

Member Secretary
SHRI GAURAV JAYASWAL
SCIENTIST 'C'/DEPUTY DIRECTOR
(TRANSPORT ENGINEERING), BIS

[\(Continued from second cover\)](#)

IS 15713 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) fuel system components — Pressure regulator (<i>first revision</i>)
IS 15714 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) fuel system components — Gas air mixer (<i>first revision</i>)
IS 15715 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG)/Liquefied petroleum gas (LPG) fuel system components — CNG/bio-CNG/LPG conduit (ventilation hose/pipe) (<i>first revision</i>)
IS 15716 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) fuel system components — CNG/bio-CNG high pressure fuel line (rigid) with end connections [having pressure exceeding 2.15 MPa (21.5 bar)]
IS 15717 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG)/Liquefied petroleum gas (LPG) fuel system components — Petrol valve (automatic/manual)
IS 15718 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) fuel system components — CNG/bio-CNG high pressure fuel line (flexible hose) with end connections (having pressure exceeding 2.15 MPa)
IS 15719 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG)/liquefied petroleum gas (LPG) fuel system components — Electrical wiring kit
IS 15720 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) /Liquefied petroleum gas (LPG) fuel system component — Compartments sub-compartments
IS 15722 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) fuel system components — CNG/bio-CNG flexible fuel line with or without end connections (having pressure not exceeding 2.15 MPa)
IS 15723 : 2024	Road vehicles — Compressed natural gas (CNG)/bio-compressed natural gas (bio-CNG) /Liquefied petroleum gas (LPG) fuel system components — Current limiting devices (<i>first revision</i>)

The composition of the Committee responsible for the formulation of this standard is given in [Annex A](#).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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