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Draft Indian Standard

**SAFETY COLOURS, SAFETY SIGNS AND ACCIDENT PREVENTION TAGS —
CODE OF PRACTICE**
(Second Revision of IS 9457)

(ICS 01.080.10)

Occupational Safety and Health Sectional
Committee, CHD 08

Last Date for Comments : 16 May 2024

Occupational Safety and Health Sectional Committee, CHD 08

FOREWORD

(Formal clause shall be added later)

IS 9457 was first published in 1980 to unify widely different Codes of practice hoping that those involved in the preparation of new or amended schemes for safety colours and safety signs will base their schemes on the provisions of this standard. Over the years, throughout the world, code of practice for safety colours and safety signs have further developed to draw attention rapidly to hazardous situations and objects. The first revision in 2005 was based on ISO 3864-1 ‘Safety colours and safety signs — Part 1: Design principles for safety signs on workplaces and in public areas’.

This standard also fulfills the need to standardize a system of providing safety information which does not require the use of words. The need arises because of the increase in national and international trade and travel and the growth of work forces lacking a common language. Further, this standard would help in education which is an essential part of disseminating safety information. It is desirable to standardize these systems as lack of standardization may perhaps lead to confusion and even accidents.

Subsequently it was observed that another standard “IS 8095:1976 Specification for accident prevention tag” also exist. The Committee felt that both the standards being dealing with same requirements, combination of these standards would provide unique information. This second revision is based on combination of both IS 8095 and IS 9457 and also augmentation of prevailing safety related additional information on the subject.

Draft Indian Standard
**SAFETY COLOURS, SAFETY SIGNS AND ACCIDENT
PREVENTION TAGS — CODE OF PRACTICE**
(*Second Revision*)

1 SCOPE

This standard prescribes the safety identification colours, design principles for safety signs and accident prevention tags to be used in workplaces and in public areas for the purpose of accident prevention, fire protection, health hazard information and emergency evacuation.

This standard is applicable to workplaces, all locations and all sectors where safety-related questions may be posed. However, it is not applicable to the signaling used for guiding rail, road, river, maritime and air traffic and generally speaking, to those sectors subject to regulations which may differ.

2 REFERENCE

The standard given below contains provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated was valid. All standards are subject to revisions and parties to agreement based on this standard is encouraged to investigate the possibility of applying the most recent editions of the standard;

<i>IS No.</i>	<i>Title</i>
IS 5 : 2007	Colours for ready mixed paints and enamels (<i>first revision</i>)

3 TERMINOLOGY

For the purpose of this standard, the following terms and definitions apply.

3.1 Biological Hazards — For the purpose of this standard the term biological hazard shall include only those infectious agents presenting a risk or potential risk to the well-being of human.

3.2 Ionizing Radiation — For the purpose of this standard the term ionizing radiation means gamma rays, X-rays, and rays consisting of alpha particles, beta particles, neutrons, protons and other nuclear and sub-atomic particles, but not sound or radiowaves, or visible, infrared or ultraviolet light.

3.3 Coefficient of Retroreflection, R' — Plane retroreflecting surface quotient of the luminous intensity (I) of a plane retroreflecting material in the direction of observation divided by the product of the illuminance (E_1) of the retroreflecting surface on a plane perpendicular to the direction of the incident light and its area (A).

$$R' = \frac{1}{E_1 A}$$

3.4 Combined Materials — Materials which combine the optical characteristics of photo luminescent and retro reflective materials.

3.5 Critical Detail — Element of a graphical symbol without which the graphical symbol cannot be understood.

3.6 Fluorescence — Photoluminescence in which the emitted optical radiation results from direct transitions from the photo-excited energy level to a lower level, these transitions taking place generally within 10 ns after the excitation.

3.7 Luminance Contrast — Quotient of the luminance of the contrast colour L_1 divided by the luminance of the safety colour L_2 where L_1 is greater than L_2 .

$$K = \frac{L_1}{L_2}$$

3.8 Luminance Factor — Ratio of the luminance of the surface element in a given direction to that of a perfect reflecting or transmitting diffuser identically illuminated.

3.9 Luminescence — Emission, by atoms, molecules or ions in a material of optical radiation which for certain wavelengths or regions of the spectrum is in excess of the radiation due to thermal emission from that material at the same temperature, as a result of these particles being excited by energy other than thermal agitation.

3.10 Ordinary Materials — Materials which are neither retroreflecting nor luminescent.

3.12 Phosphorescence — Photoluminescence delayed by storage of energy in an intermediate energy level.

3.13 Photoluminescence — Luminescence caused by absorption of optical radiation.

3.14 Radioactive Material or Substance - Radioactive substance” or “Radioactive material” means any substance or material which spontaneously emits radiation in excess of the levels prescribed by notification from *Government in compliance of Atomic Energy Act 1962*.

3.15 Retroreflecting Materials — Materials which reflect radiation in a direction close to the opposite of the direction from which it came.

3.16 Safety Colour — Colour of special properties to which a safety meaning is attributed.

3.17 Safety Marking — Marking which adopts the use of safety colours and/or safety contrast colours to convey a safety message or render an object or location conspicuous.

3.18 Safety Sign — Sign which gives a general safety message, obtained by a combination of a colour and geometric shape and which by the addition of a graphical symbol, gives a particular safety message.

3.19 Safety Tag — Tags shall be used as a means of alertness to prevent inadvertent accidental injury or illness to employees who are exposed to hazardous or potentially hazardous conditions, equipment or operations which are out of the ordinary, unexpected or not readily apparent. Tags shall be used until such time as the identified hazard is eliminated or the hazardous operation is completed. Places where signs, guarding or other positive means of protection are already in use, use of Safety Tags should be avoided.

3.20 Supplementary Sign — Sign that is supportive of another sign and whose main purpose is to provide additional clarification.

3.21 Tag — The word ‘tag’ as used in this standard refers to a surface (usually cardboard, paperboard, pasteboard, digital display or some temporary or non- permanent material and weather proof) on which letters or markings, or both, appear. These letters or markings, or both, are for warning (cautioning) or safety instructions all concerned who may be exposed to hazards. They are to be affixed on the surface and or to the device in question by string, wire, or adhesive.

4 PURPOSE OF SAFETY COLOURS, SAFETY SIGNS AND TAGS

4.1 The purpose of safety colours and safety signs is to draw attention rapidly to objects and situations affecting safety and health and to gain rapid understanding of a specific message.

4.2 The use of safety colours and safety signs should not replace the need for proper accident prevention measures.

4.3 Safety signs shall be used only for instructions which are related to safety and health.

5 GEOMETRIC FORM, SAFETY COLOURS, SAFETY SIGNS AND TAGS

5.1 Safety Colours

There shall be four safety colours—red, yellow, green and blue. Their shades shall be close match to the following shade numbers (*see* IS 5):

Red : Shade number 537 signal red

Yellow : Shade number 309 canary yellow

Green : Shade number 221 brilliant green

Blue : Shade number 166 french blue



Magenta : Shade number --- (Not available in IS 5 but need to be included considering uses in radiological safety)







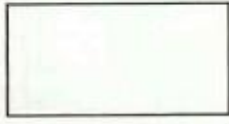


5.1.1 Periodic checks should be made to ensure that the colours of the signs, symbols and tags continued to be a close match to the standard shades mentioned above.






5.2 General meaning assigned to geometric shapes safety colours and contrast colours for safety signs and Tags is given in Table 1.

Table 1 General Meaning of Geometric Shapes, Safety Colours and Contrast Colours

(*Clause 5.2*)

List No.	Geometric Shape	Meaning	Safety Colour	Contrast Colour	Graphical Symbol Colour	Example of Use
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	 Circle with Diagonal Bar	Prohibition	Red	White	Black	a) No Smoking b) No Unauthorised Vehicles c) Do not Drink
ii)	 Circle	Mandatory Action	Blue	White	White	a) Wear Eye Protection b) Wear Personal Protective Equipment c) Switch off

						Before Beginning work
iii)	 Equilateral Triangle	Warning	Yellow	Black	Black	a) Danger Hot Surface b) Danger Acid c) Danger High Voltage
iv)	 Square  Rectangle	Safe Condition Means of Escape Safety Equipment	Green	White	White	a) First Aid Room b) Fire Exit c) Fire Assembly Point
v)	 Square  Rectangle	Fire Safety	Red	White	White	a) First Alarm Call Point b) Fire Fighting Equipment c) Fire Extinguisher
vi)	 Square  Rectangle	Supplementary Information	White or the Colour of the Safety Sign	Black or the Contrast Colour of the Relevant Safety Sign	Symbol colour of the Relevant Safety Sign	As Appropriate to Reflect Message given by Graphical Symbol
vii)		Radiation warning sign	Magenta	Yellow	Yellow	Radiation hazard
viii)		Radiation warning sign (Internationally)	Black	Yellow	Yellow	Radiation hazard

ix)		X-Ray Radiation	Red	Yellow & White	Black	X-Ray radiation
x)		Radiation in sealed source	Red	Black	Black	a) Radiation source b) Radioactive material (For general public)
xi)		Transport: Category I Radiation label	Black	White	Black (Colour of Bar- Red)	Radiation level on external surface: Not more than 0.005 mSv/h
xii)		Transport: Category II Radiation label	Black	Upper part- Yellow Lower part- White	Black (Colour of Bar- Red)	Radiation level on external surface: More than 0.005 mSv/h but not more than 0.5 mSv/h
xiii)		Transport: Category III Radiation label	Black	Upper part- Yellow Lower part- White	Black (Colour of Bar- Red)	Radiation level on external surface: More than 0.5 mSv/h but not more than 2 mSv/h

6 DIMENSIONS OF SAFETY SIGNS AND TAGS

6.1 Dimensions for Safety Signs

The preferred dimensions of safety signs and preferred letter sizes should be as given in Table 2.

Table 2 Dimensions of Safety Signs

(Clause 6.1)

Sl No.	Modular Height of Sign Plate	Diameter or Height of Geometric Safety Sign (b)	Height of Letter 'x'
	mm	mm	mm
(1)	(2)	(3)	(4)

i)	75	60	5.0
ii)	100	80	6.6
iii)	150	120	10.0
iv)	225	180	15.0
v)	300	240	20.0
vi)	600	480	40.0
vii)	750	600	50.0
viii)	900	720	60.0
ix)	1 200	960	80.0

6.2 Dimensions of Accident Prevention Tags

Accident Prevention Tags can be in the form of single tag or can be a continuous, for example, barricade tape

The preferred dimensions of safety sign and tags and preferred letter sizes are as follows:

- a) Viewing distance / letter height for tags. The tag signal word shall be legible under normal viewing conditions at a distance of 5 feet (1.52 m) or such greater distance as warranted by the hazard. Minimum signal word letter height should be 3/8 inch (0.95 cm). Message panel text shall be legible under normal viewing conditions.
- b) Letter height for barricade tape for signal words, minimum letter height shall be one unit in height for every 150 units of safe viewing distance from the hazard alerting device. For remaining text in the message panel, minimum letter height shall be one unit in height for every 300 units of safe viewing distance. The safe viewing distance will be determined for each specific case where a barricade tape is needed. The message panel text shall meet the legibility criteria at the determined safe viewing distance.

6.3 Tag Size and Shape

The tag should have a rectangular shape. The corners may be square cut, chamfered, or rounded.

7 LAYOUT OF SAFETY SIGNS

7.1 General

The safety colours, contrast colours and geometric shapes (*see* 5) shall be used only in the following combinations to obtain the five basic types of safety signs (*see* Fig. 1 to Fig. 7).

Where a graphical symbol is not available to indicate a particular desired meaning, the meaning shall be obtained preferably by using the appropriate general sign together with a supplementary sign (*see* Fig. 8 to Fig. 16).

Borders are recommended to achieve contrast between the safety and/or supplementary sign and the surrounding. The value of the border is 0.025 to 0.05 of the geometric shape as shown in Fig. 1 to Fig. 10 and using the dimensions 'as' for rectangular signs. For practical reasons d is equal to d_s and b is equal to b_s within a tolerance of 5 percent.

7.2 General Tag Criteria

All required tags shall meet the following criteria:

- It is recommended that the tags are printed in Hindi, English and regional language of the state where the tags are likely to be used.
- Tags shall contain a SIGNAL word and a major message.
- The SIGNAL word shall be either "Danger," "Caution," or "Biological Hazard," "BIOHAZARD," or the Ionizing Radiation hazard symbol.
- The major message shall indicate the specific hazardous condition or the instruction to be communicated to the employee.
- The signal word shall be readable at a minimum distance of 1.5 m or such greater distance as warranted by the hazard.
- The tag's major message shall be presented in either pictographs, written text or both.
- The signal word and the major message shall be understandable to all employees who may be exposed to the identified hazard.
- From all shall get informed as to the meaning of the various tags used throughout the workplace and areas about the special precautions those are necessary.
- Tags shall be affixed as close as safely possible to their respective hazards by a positive means such as string, wire, or adhesive that prevents their loss or unintentional removal.

7.3 Prohibition Signs

Prohibition signs shall comply with the layout requirements given in Fig. 1

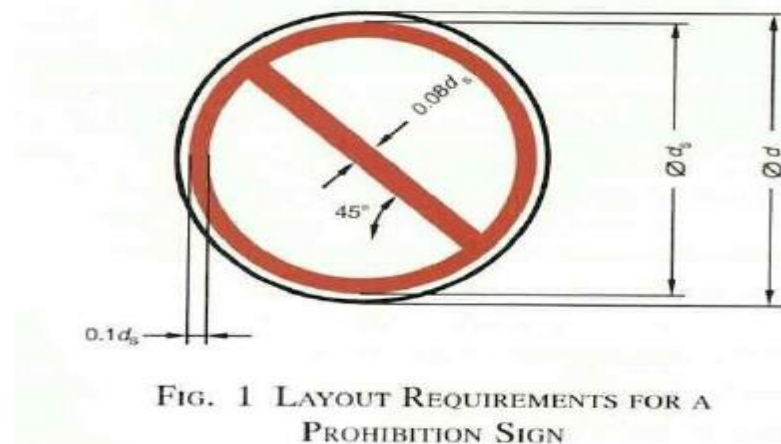


FIG. 1 LAYOUT REQUIREMENTS FOR A PROHIBITION SIGN

The colours of the sign shall be as follows:

- Background colour : White
- Circular band and diagonal bar : Red
- Graphical symbol : Black

- d) Border : White

The safety colour red shall cover at least 35 percent of the total area of the sign.

7.4 Mandatory Action Signs

Mandatory action signs shall comply with the layout requirements given in Fig. 2.

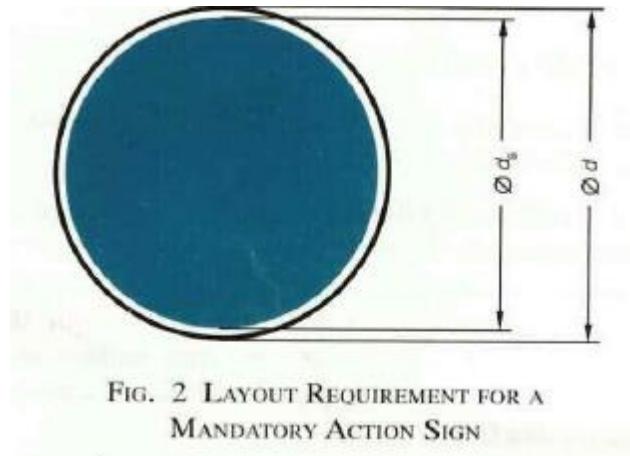


FIG. 2 LAYOUT REQUIREMENT FOR A MANDATORY ACTION SIGN

The colours of the sign shall be as follows:

- a) Background colour : Blue
b) Graphical symbol : White
c) Border : White

The safety colour blue shall cover at least 50 percent of the area of the sign.

7.5 Warning Signs

Warning action signs shall comply with the layout requirements given in Fig.3.

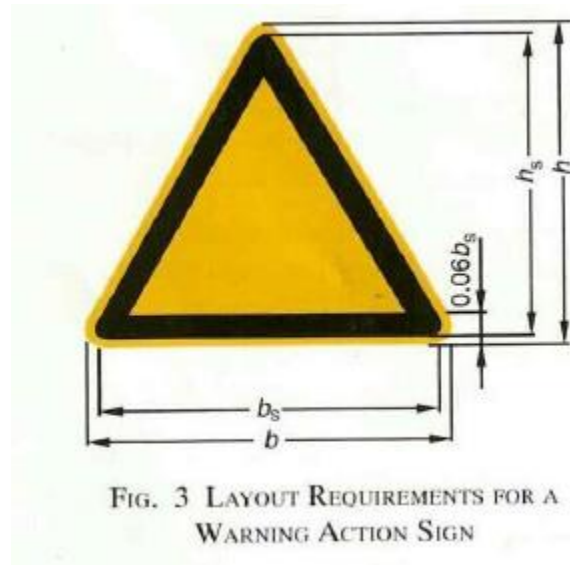


FIG. 3 LAYOUT REQUIREMENTS FOR A WARNING ACTION SIGN

The colours of the sign shall be as follows:

- a) Background colour : Yellow
- b) Triangular band : Black
- c) Graphical symbol : Black
- d) Border : Yellow or white

The safety colour shall cover at least 50 percent of the total area of the sign.

7.6 Safe Condition Signs

Safe condition signs shall comply with the layout requirements given in Fig.4 or Fig.5.

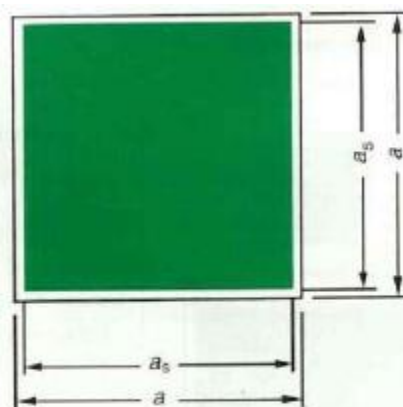


FIG. 4 LAYOUT REQUIREMENTS FOR A SQUARE SAFE CONDITION SIGN

FIG.4 LAYOUT REQUIREMENTS FOR A SQUARE SAFE CONDITION SIGN

The colours of the sign shall be as follows:

- a) Background colour : Green
- b) Graphical symbol : White
- c) Border : White

The safety colour green shall cover at least 50 percent of the area of the sign.

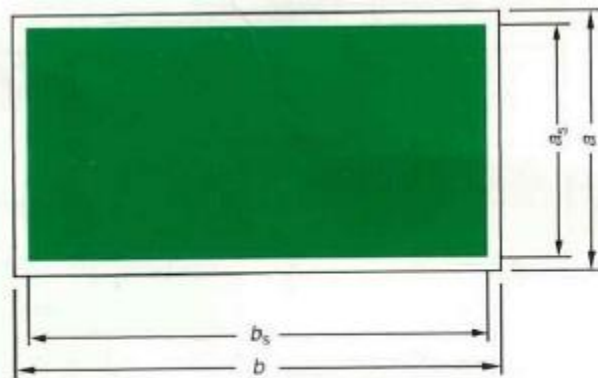


FIG. 5 LAYOUT REQUIREMENTS FOR A RECTANGULAR
SAFE CONDITION SIGN

FIG. 5 LAYOUT REQUIREMENTS FOR A RECTANGULAR SAFE CONDITION SIGN

The colours of the sign shall be as follows:

- a) Background colour : Green
- b) Graphical symbol : White
- c) Border : White

The safety colour green shall cover at least 50 percent of the area of the sign.

7.7 Fire Safety Signs

Fire safety signs shall comply with the layout requirements given in Fig. 6 or Fig. 7.

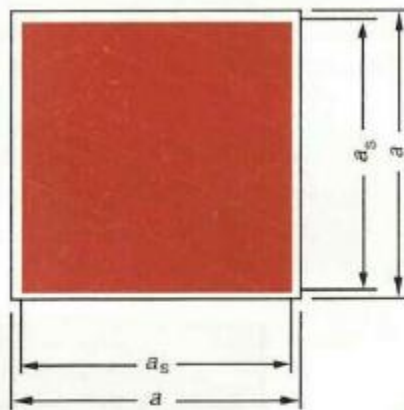


FIG. 6 LAYOUT REQUIREMENTS FOR A SQUARE
FIRE SAFETY SIGN

FIG. 6 LAYOUT REQUIREMENTS FOR A SQUARE FIRE SAFETY SIGN

The colours of the sign shall be as follows:

- a) Background colour : Red
- b) Graphical symbol : White

- c) Border : White

The safety colour red shall cover at least 50 percent of the area of the sign.

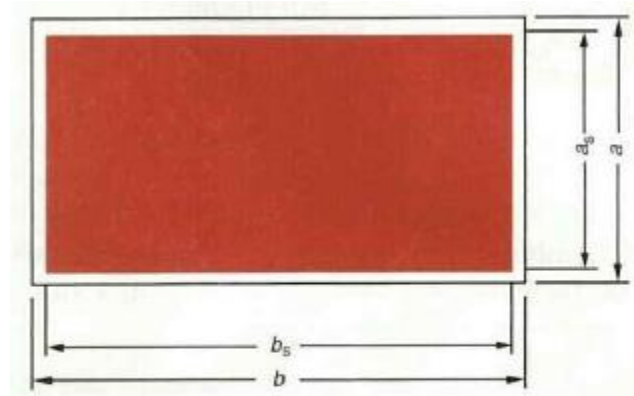


FIG. 7 LAYOUT REQUIREMENTS FOR A
RECTANGULAR FIRE SAFETY SIGN

FIG. 7 LAYOUT REQUIREMENTS FOR A RECTANGULAR FIRE SAFETY SIGN

The colours of the sign shall be as follows:

- a) Background colour : Red
b) Graphical symbol : White
c) Border : White

The safety colour red shall cover at least 50 percent of the area of the sign.

7.8 Radiation Safety Signs

Radiation safety signs shall comply with the layout requirements given in Fig. 8.

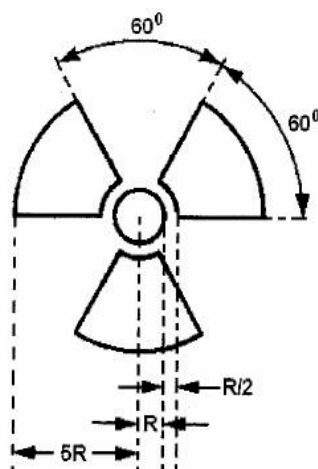


FIG. 8 RADIATION SYMBOL

- a) Background Colour : Yellow
- b) Graphical symbol : Magenta



FIG 9 THE NEW SUPPLEMENTARY RADIATION WARNING SYMBOL.

The new symbol help reduce needless deaths and serious injuries from accidental exposure to large radioactive sources (Fig. 9). It will serve as a supplementary warning to the trefoil, which has no intuitive meaning and little recognition beyond those educated in its significance.

With radiating waves, a skull and crossbones and a running person, a new ionizing radiation warning symbol is being introduced to supplement the traditional international symbol for radiation, the three cornered trefoil.

- a) Background colour : Red
- b) Graphical symbol : Black
- c) Border : Black

7.9 Radiation Safety Signs for transports

Radiation safety signs for the transport of the radioactive material shall comply with the layout requirements given in Fig. 9, Fig. 10, Fig. 11 and Fig. 12.

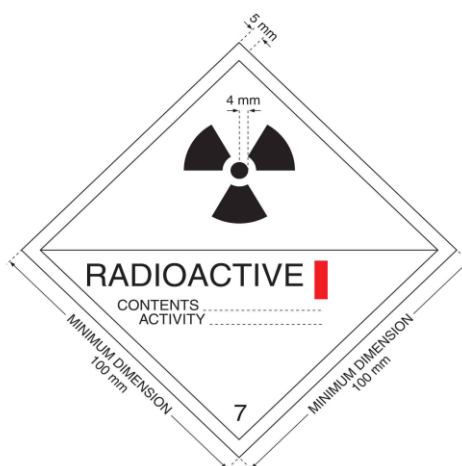


FIG.10 TRANSPORT: CATEGORY I RADIATION LABEL

Background colour : White

Graphical symbol : Black (Colour of Bar- Red)
Border : Black



FIG 11 TRANSPORT: CATEGORY II RADIATION LAG

Background colour : Upper part- Yellow, Lower part- White
Graphical symbol : Black (Colour of Bar- Red)
Border : Black

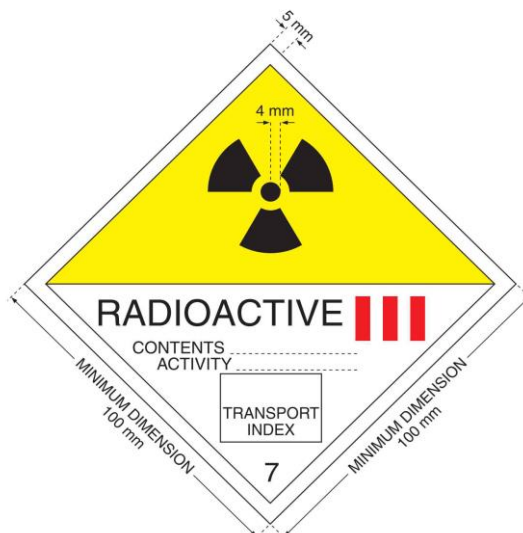


FIG 12 TRANSPORT: CATEGORY III RADIATION LABEL

Background colour : Upper part- Yellow, Lower part- White
Graphical symbol : Black (Colour of Bar- Red)

Border : Black

7.10 Laser Warning Signs and Labels



FIG 13 LASER — CAUTION LABEL

Caution: Indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Use: The signal word “Caution” shall be used with all signs and labels associated with Class 2 and Class 2M LASER and LASER systems, which do not exceed the applicable MPE for irradiance.



FIG 14 LASER — DANGER LABEL

Danger: Indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme conditions

Use: The signal word “Danger” shall be used with all signs and labels associated with all LASER and LASER system that exceed the applicable MPE for irradiance, including all Class 3R, Class 3B and Class 4 LASER and LASER systems. The optical density of protective eyewear and wavelength shall be shown on the sign for a location requiring the use of eyewear.

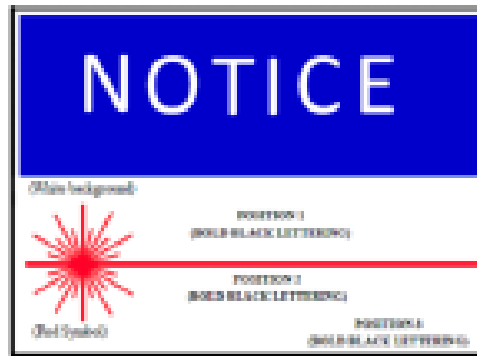


FIG 15 LASER — NOTICE

Notice: Indicates a statement of facility policy as the message relates directly or indirectly to the safety of personnel or the protection of property. This signal word shall not be associated directly with a hazard or hazardous situation and must not be used in place of “DANGER” or “CAUTION”.

Use: The signal word “Notice” shall be used on signs posted outside a temporary LASER control area such as during periods of service.

8 'DO NOT START' TAGS

8.1 The panel background colour for ‘Do Not Start’ tags shall be red (*see* Fig.16). Letters shall be white or grey or etched, provided that a long-lasting and sharp contrast results.

8.2 ‘Do Not Start’ tags shall be placed in a conspicuous location or shall be placed in such a manner that they effectively block the starting mechanisms which could cause hazardous conditions should the equipment be energized.

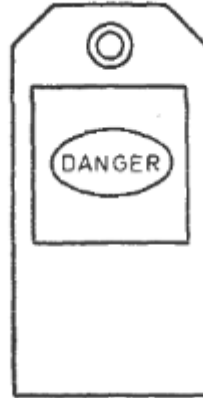


FIG. 16 DO NOT START TAG

9 'DANGER' TAGS

9.1 'Danger' tags shall be used only where an immediate hazard exists. There should be no variation in the type of design of tags pasted or hung to warn of specific danger (*see* Fig. 17).

9.2 All employees should be instructed that danger tags indicate immediate danger and that special precautions should be taken for safety.

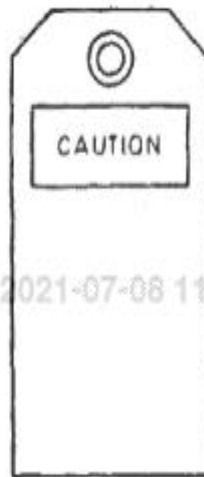


WHITE TAG, WHITE LETTERS, RED OVAL IN BLACK SQUARE PANEL

FIG. 17 DANGER TAG

10 'CAUTION' TAGS

10.1 'Caution' tags -shall be used only to warn against potential hazards or to caution against unsafe practice (*see* Fig. 18).



ily, New Delhi:2021-07-08 11:06:50

YELLOW TAG, WHITE LETTERS, BLACK PANEL

FIG.18 CAUTION TAG

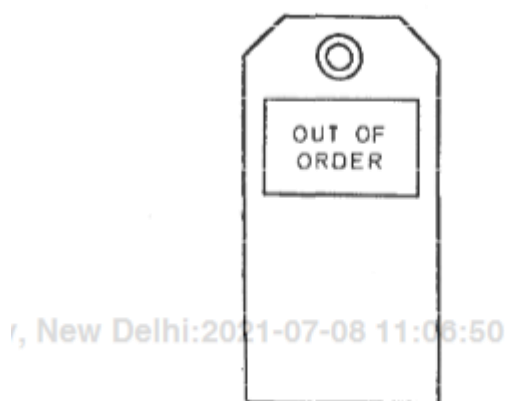
10.2 All employees should be instructed that 'Caution' tags indicate a possible hazard against which proper precautions should be taken.

10.3 'Caution' tags might include such messages as:

- Caution - Do Not Operate, Men Working on Repairs
- Caution - Hands Off, Men Working on Line
- Caution- Men Working on Machines, Do Not Start
- Caution - Stop Machinery to Clean, Oil, or Repair

11 'OUT OF ORDER' TAGS

11.1 'Out of Order ' tags shall be used only for the specific purpose of indicating that a piece of equipment, machinery, etc., is out of order and to attempt to use it might present a hazard (*see* Fig.19).



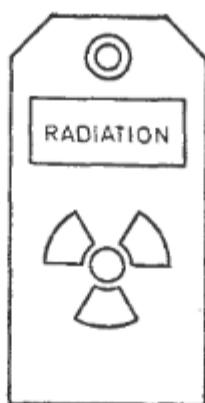
WHITE TAG, WHITE LETTERS, BLACK PANEL

FIG. 19 OUT OF ORDER TAG

12 'RADIATION' TAGS

12.1 The colour for 'radiation' tags shall be yellow; the panel shall be reddish purple. Any letters used against the yellow background shall be black. The colours shall be those of opaque glossy types.

12.2 The method of dimensioning, design, and orientation of the symbol (one blade pointed downward and centered on the vertical axis) shall be executed as illustrated in Fig. 20. The symbol shall be prominently displayed and shall be of a size consistent with the size of the equipment or area in which it is to be used.



YELLOW TAG, YELLOW LETTERS, REDDISH-PURPLE
PANEL AND SYMBOL (ADDED WORDING) IN
BLACK ON YELLOW BACKGROUND

FIG 20 RADIATION TAG

13 'BIOLOGICAL HAZARD' TAGS

13.1 The colour for the 'Biological Hazard' panel and symbol (*see* Fig. 21) shall be a flourescent orange or orange-red.



FIG 21 BIOLOGICAL HAZARD TAG

13.2 The 'Biological Hazard' tag shall be used to signify the actual or potential presence of a biohazard and to identify equipment, containers, rooms, materials, experimental animals, or combination thereof; which contain, or are contaminated with, viable hazardous agents.

14 SIZES OF TAGS

14.1 Sizes — No rigid sizes of tags are laid down but it is recommended that they should be of a suitable size.

15 MATERIAL OF CONSTRUCTION

15.1 Stock — Tags may be prepared from cloth or jute or any eco-friendly materials such as paperboard, depending on the use to which they are to be put.

15.2 Tag Reinforcement — Wherever considered necessary, the tags shall be of weatherproof materials.

15.2.1 Although the diameter of the eye-let of the tag shall be kept upto 5 mm. As an additional reinforcement, metal eyelets, normally 5 mm, may be inserted into the hole.

15.3 Tag Attachment — The tags shall be attached to the equipment by the use of either cord or metal wire (not less than 0.6 mm diameter).

16 LAYOUT OF SUPPLEMENTARY, COMBINATION AND MULTIPLE SIGN

16.1 General

Words may be used to supplement or clarify the meaning of the symbol(s) used on a safety sign. Words shall be placed in either a separate supplementary sign or as a part of a combination sign.

16.2 Supplementary Signs

Supplementary signs shall comply with the layout requirements given in Fig. 22 or Fig. 23.

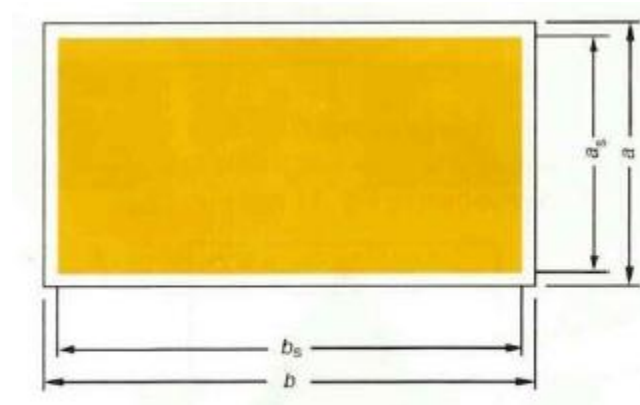


FIG 22 LAYOUT REQUIREMENTS FOR SUPPLEMENTARY SIGNS

The colours of the sign shall be as follows:

Background colour: White or safety colour of the safety sign

Symbol or text colour: Relevant contrast colour

Border: White

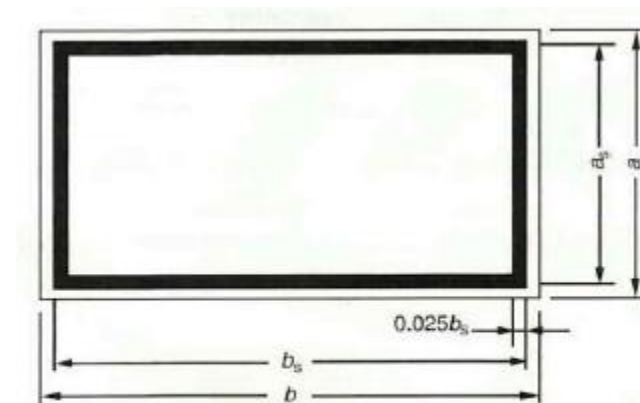


FIG. 23 LAYOUT REQUIREMENTS FOR SUPPLEMENTARY SIGNS WITH BORDERS

The colours of the sign shall be as follows:

Background colour: White or safety colour of the safety sign

Symbol or text colour: Relevant contrast colour

Border: White

Boundary: Black

16.3 Position Assignment of a Supplementary Sign

The positions of fire supplementary sign are shown in Fig. 24. The supplementary sign shall be placed below (see Fig. 25) to the right (see Fig. 26) or to the left of the safety sign.



FIG 24 POSITION ASSIGNMENT OF SUPPLEMENTARY SIGNS

16.4 Combination Signs

Combination signs contain the safety sign and the supplementary sign on one rectangular carrier. Examples are shown in Fig. 25 and Fig. 26.



FIG. 25 LAYOUT FOR A COMBINATION SIGN WITH THE SUPPLEMENTARY SIGN
BELOW THE SAFETY SIGN

The colours of the sign shall be as follows:

Colour of sign carrier: Colour of the safety sign or white

Symbol or text colour: Relevant contrast colour

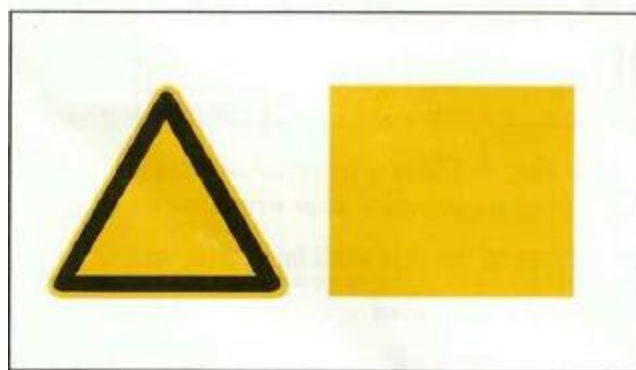


FIG. 26 LAYOUT FOR A COMBINATION SIGN WITH THE SUPPLEMENTARY SIGN

To the Right of the Safety Sign

The colours of the sign shall be as follows:

Colour of sign carrier: Symbol or text

Colour: Colour of the safety sign or white relevant contrast colour

16.5 Multiple Signs as a Means of Communicating Complex Safety Messages

A multiple sign is a combination sign containing two or more safety signs and/or associated supplementary signs on the same rectangular carrier. An example of a layout for a multiple sign used to communicate a warning, a mandatory instruction to avoid risk of injury and/or provide a prohibition message is given in Fig. 27.

In multiple signs, the order of the safety signs (and/or the corresponding supplementary signs) should according to the importance of the safety messages. The horizontal layout may also be used.



FIG. 27 EXAMPLES OF LAYOUT OF MULTIPLE SIGNS

16.6 Typical example of Radiation Symbol to be pasted at the Entrance of an X-Ray Facility is given in Fig. 28 below.

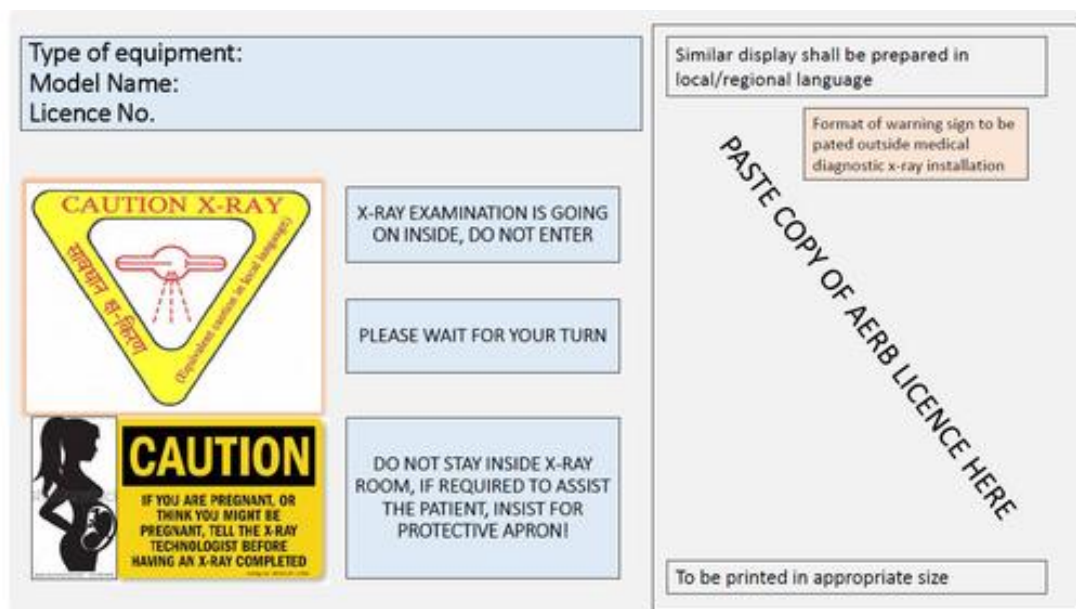


FIG. 28 EXAMPLE OF RADIATION SYMBOL OUTSIDE X-RAY FACILITY

16.7 Combination Signs Using the Supplementary Sign Depicting an Arrow, with and without Supplementary Text Signs

A graphical symbol sign, a supplementary sign and a supplementary directional arrow sign, may be combined to provide a comprehensive directional safety message. Examples are given in Fig. 29 to Fig. 31.

A combination sign on one carrier may omit internal borders.

Directional arrows shall be placed below or to the left or right of the safety sign.



FIG. 29 EXAMPLE OF COMBINATION SIGNS WITH DIRECTIONAL ARROW ON LEFT



FIG. 30 EXAMPLE OF COMBINATION SIGNS WITH DIRECTIONAL ARROW ON RIGHT –
EXAMPLE (1)



FIG. 31 EXAMPLE OF COMBINATION SIGNS WITH DIRECTIONAL ARROW ON RIGHT –
EXAMPLE (2)

17 LAYOUT OF SAFETY MARKINGS

17.1 The bands are of equal width inclined at an angle of approximately 45° (*see* Fig. 32 to Fig. 35).

The colours of safety marking which indicate hazard locations shall be a combination of yellow and contrast black as shown in Fig. 32.



FIG. 32 SAFETY MARKING FOR INDICATING HAZARD LOCATIONS

17.2 The colours of safety marking which indicate prohibition or location of firefighting equipment shall be a combination of red and contrast white as shown in Fig. 33.



FIG. 33 SAFETY MARKING FOR INDICATING PROHIBITION OR
LOCATION OF FIRE FIGHTING EQUIPMENT

17.3 The colours of safety marking which indicate a mandatory instruction shall be a combination of blue and contrast white as shown in Fig. 34.



FIG. 34 SAFETY MARKING FOR INDICATING MANDATORY INSTRUCTIONS

17.4 The colours of safety marking which indicate a safe condition shall be a combination of green and contrast white as shown in Fig. 35.



FIG. 35 SAFETY MARKING FOR INDICATING A SAFE CONDITION

18 DESIGN OF SYMBOLS

18.1 Design of symbols shall be as simple as possible and details not essential for the understanding of safety message should be omitted.

18.1.1 Examples of some safety symbols in common use are given in Annex A.

NOTE — If symbols shown in this standard do not cover a particular desired meaning, other symbol already standardized in other connection should be tried or text only should be used.

19 BARRICADING TAPES

Barricade tape is brightly colored tape (often incorporating a two-tone pattern of alternating yellow-black or red-white stripes or the words "Caution" or "Danger" in prominent lettering) that is used to warn or catch the attention of passersby of an area or situation containing a possible hazard. It acts as a minor impediment to prevent accidental entrance to that area or situation and as a result enhances general safety. Barricade tape is also known as construction tape or barrier tape, or in reference to the safety hazard involved as caution tape, warning tape, danger tape or hazard tape.

The tape is often wrapped and affixed as a visual warning sign and demarcation, for instance against entering a dangerous area, such as an industrial or commercial building site, a roadworks construction site or the scene of an accident or a crime (for crime scene preservation), or against handling inoperative machinery or appliances.

19.1 Description

Barricade tape is made with durable, resilient, tear-proof plastic materials such as polyethylene, polypropylene, or nylon. Different manufacturers offer different sizes and thicknesses of barricade tape. Barricade tape often has a bright background and pre-printed bold warning text. It is also possible to purchase plain barricade tape and write a custom message on it.

19.2 Types

Barricade tape is used according to the color specifications depending on the nature of hazard. and may be used primarily as a safety precaution for various industrial activities and procedures.

19.2.1 Construction Tape

This is used in construction zones to notify people about ongoing construction and that there are possible hazards within the demarcated area. Construction tape usually employs a yellow-black color combination and incorporates printed text, such as "Under Construction", "Caution", "Work Zone", and "Keep Out" (among others). This type of barrier tape is commonly found at the site of renovations, demolition, and minor repairs.

19.2.2 Hazard Tape

This is used in locations containing a substantial danger. Examples include electrocution hazards or areas within which there is a risk of exposure to toxic chemicals. In some regions, the specific color combination indicates the type of threat. For example, yellow-black tape may be used to signal the presence of a physical hazard (e.g., a hole), while magenta-yellow can denote a radiation hazard. This type of barrier tape is commonly used in laboratories, production areas, and industrial zones.

19.2.3 Traffic Control Device Tape

This type of barrier tape, as its name implies is used to control traffic, whether foot traffic or vehicle traffic. Traffic control device tapes are used as temporary traffic signal to redirect traffic during parade or whenever a road is closed. These are usually brightly colored, either in solid orange or orange-white combination.

19.2.4 Police Tape or Law Enforcement Tape

This type of barrier tape is used to isolate, protect and preserve a crime scene. Police tape is used to notify the public that an investigation is ongoing and that a particular area is restricted. This is usually seen with a yellow-white, yellow-black or blue-white color combination.

19.2.5 Firefighter Tape

This serves the same purpose as police tape and hazard tape. Firefighter tape is used to isolate a particular area during or after a fire to keep the public away from fire-related risks (for example, smoke inhalation, airborne particulate matter, and damaged structures).

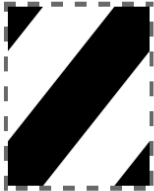
The choice of colours of barricade tape depends on the contrast with its background, which in the case of the sky, can vary from black to white. To have a reasonable chance of being visible against most backgrounds, the tape needs a light colour (white or yellow) and a darker colour.

Typical Specified barricade tape color are as follows

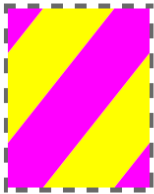
- a) Red /white - for Fire Prevention and Protection Equipment.
- b) Black / white - for Housekeeping and Aisle Marking
- c) Magenta /yellow - for Radiation Hazards
- d) Green / white- for Safety and First Aid
- e) Blue / white- for Defective Machinery
- f) Orange / white - for Traffic and Caution Warning
- g) Black / yellow for Physical Hazards



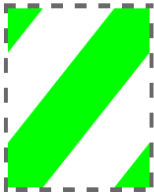
**Fire Prevention and
Protection Equipmen**



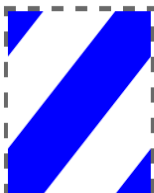
**Housekeeping and
Aisle Marking**



Radiation Hazards



Safety and FirstAid



Defective Machinery



**Traffic and
Caution Warning**



Physical Hazards

20 DIGITAL SIGNAGES

Digital signage is a kind of electronic signage, which, in turn, is defined as display technologies such as LCD, LED, projection, and e-paper.

20.1 Key Components

- a) **Digital Signage Content** - An inventory of audio, video, image, graphics, text, and more, assembled to tell unique stories for any number of unique intents.
- b) **Digital Signage Hardware** – The physical, tangible components like screens, mounts, payment devices, printers, cameras, etc.
- c) **Digital Signage Software** – The digital infrastructure enabling the creation, deployment, management, and analysis of content deployed on the hardware

20.2 Applications

There are various examples of digital signage that engage your guests. Here are some examples of the most common types of digital signage, based on usage scenario:

- a) **Public** - location-specific information (news, weather, traffic, etc.), maps, way finding
- b) **Corporate** - knowledge sharing, meeting room booking, meeting coordination, training
- c) **Sales** - product/service portfolios, whiteboarding, demonstrations
- d) **Tourism** - wayfinding, points of interest, city information
- e) **Retail** ng- self-check-out, endless aisle, product showcase, smart mirror
- f) **Restaurants** - self-service, digital menu board, self-ordering kiosk
- g) **Marketing** - promotions, ambiance, gamification
- h) **Museums** - gallery, wayfinding, digital tours
- j) **Education** - classroom teaching, wayfinding, library exhibitions
- k) **Exhibit and Tradeshow** - interactive product/service catalogs, visitor registration, networking.

21 SIGNS AND OUTDOOR DISPLAY STRUCTURES

21.1 National Building Code (SP-7) specifies about the Signs and Outdoor Display Structure in Part-10. A few important aspects which are required to be considered for designs of External Signage Design so to address the following main issues related to overall sustainability:

- a) The signage shall be classified as external lit and internal lit and further classified based on functional requirements such as emergency, way finding, etc. The requirements of each type of signage are different and should be evaluated based on the same. The recommended lighting power density is 130 W/m², maximum for internally illuminated signage, and 25 W/m², maximum for externally illuminated signage.
- b) Illuminated signage forms a substantial part of upward directed lighting. Efforts should be made to shield the lighting.
- c) Paints, adhesives, etc, used in the signage should be of low VOC.
- d) Fabrication of the signage should be using materials locally available and having a recycled content.

21.2 Material for Electric Signs

Every electric sign shall be constructed of non-combustible material except where

21.3 No illuminated sign in red, amber or green colour shall be erected or maintained within a horizontal distance of 10 m of any illuminated traffic sign.

21.4 Dimensions

No ground sign shall be erected to a height exceeding 9 m above the ground. Lighting reflectors may extend beyond the top or face of the sign.

ANNEX A

(Clause 18.1.1.)

SAFETY SYMBOLS IN COMMON USE

A-1 BIO-HAZARD SYMBOLS

A-2 GENERAL SAFETY SYMBOLS



SMOKING PROHIBITED



CAUTION, RISK OF DANGER



FIRE AND LIGHTING MATCHSTICK
PROHIBITED



CAUTION, RISK OF FIRE



THOROUGHFARE PROHIBITED FOR
PEDESTRIANS



CAUTION, RISK OF EXPLOSION



WATER AS EXTINGUISHING
AGENT PROHIBITED



CAUTION, RISK OF CORROSION



WATER NOT FOR DRINKING



CAUTION, RISK OF LIFE



CAUTION, RISK OF IONIZING RADIATION



RESPIRATORY PROTECTOR MUST BE WORN



CAUTION, RISK OF ELECTRIC SHOCK



HEAD PROTECTOR MUST BE WORN



FIRST AID



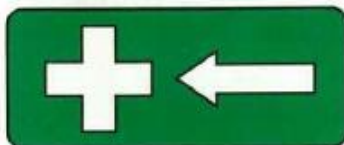
HEARING PROTECTOR MUST BE WORN



GENERAL INDICATION OF DIRECTION



HAND PROTECTOR MUST BE WORN



INDICATION OF DIRECTION TO FIRST AID










EYE PROTECTOR MUST BE WORN










FOOT PROTECTOR MUST BE WORN


A-3 TRANSPORTATION OF CHEMICALS — HAZARD SYMBOLS

UN Class No.	Classification of goods	Class Label
(1)	(2)	(3)
1.	Explosives	
2.	Gases, compressed, liquified, dissolved under pressure or deeply refrigerated	
2.1.	Non-flammable gases	
2.2.	Inflammable gases	
2.3.	Poison (toxic) gases	

UN Class No.	Classification of goods	Class Label
(1)	(2)	(3)
3.	Inflammable Liquids	
4.	Inflammable solids, substances liable to spontaneous combustion; substances which on contact with water, emit inflammable gases	
4.1.	Inflammable Solids	
4.2.	Substances liable to spontaneous combustion	

UN Class No.	Classification of goods	Class Label
(1)	(2)	(3)
4.3.	Substances which in contact with water, emit inflammable gases	
5.	Oxidizing substances and organic peroxides	
5.1.	oxidizing substances	
5.2.	Organic peroxides	
6.	Poisonous (toxic) substances and infectious substances	

UN Class No.	Classification of goods	Class Label
(1)	(2)	(3)
6.1.	Poisonous (toxic) substances	
6.2.	Harmful substances	
6.3.	Infectious substances	
7.	Radioactive substances	

UN Class No.	Classification of goods	Class Label
(1)	(2)	(3)
8.	Corrosives	

A-4 CHEMICAL HAZARD SYMBOLS

CHEMICAL HAZARD SYMBOLS

Chemical hazard symbols are found on some home products, as well as bottles of chemical reagents in the lab. Here, we take a look at European hazard symbols and the various dangers that they warn of.



ENVIRONMENTAL HAZARD

Indicates substances that are toxic to aquatic organisms, or may cause long lasting environmental effects. They should be disposed of responsibly.



ACUTELY TOXIC

Indicates life-threatening effects, in some cases even after limited exposure. Any form of ingestion and skin contact should be avoided.



GAS UNDER PRESSURE

Container contains pressurised gas. This may be cold when released, and explosive when heated. Containers should not be heated.



CORROSIVE

May cause burns to skin and damage to eyes. May also corrode metals. Avoid skin & eye contact, and do not breathe vapours.



EXPLOSIVE

May explode as a consequence of fire, heat, shock or friction. Chemicals with this label should be kept away from potential ignition sources.



FLAMMABLE

Flammable when exposed to heat, fire or sparks, or give off flammable gases when reacting with water. Ignition sources should be avoided.



MODERATE HAZARD

May irritate the skin, or exhibit minor toxicity. The chemical should be kept away from the skin and the eyes as a precaution.



OXIDISING

Burns even in the absence of air, and can intensify fires in combustible materials. Should be kept away from ignition sources.



HEALTH HAZARD

Short or long term exposure could cause serious long term health effects. Skin contact and ingestion of this chemical should be avoided.

References:

- Regulations for the Safe Transport of Radioactive Material - IAEA Safety Standards Series No. SSR-6 - 2012 Edition
- AERB Safety Code No-AERB/Nrf-Ts/Sc-1 (Rev.1)-Safe Transport of Radioactive Material (2015)

Doc: CHD 08 ((25071)WC
March 2024
IS 9457 : 20XX
Superseding IS 8095 : 1976

- c) ISO 21482:2007- Ionizing-radiation warning — Supplementary symbol. (2021)
- d) AERB Safety Guidelines No. AERB/SG/IS-7 - Safety in Design and Application of Laser (2015).
- e) National Building Code-2016 –Volume 2