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The National Institute for Occupational Safety and Health (NIOSH)



Iodine



Synonyms & Trade Names

Iodine crystals, Molecular iodine

CAS No.

7553-56-2

RTECS No.

[NN1575000](#)

DOT ID & Guide

Formula

I₂

Conversion

1 ppm = 10.38 mg/m³

IDLH

2 ppm

See: [7553562](#)

Exposure Limits

NIOSH REL

C 0.1 ppm (1 mg/m³)

OSHA PEL

C 0.1 ppm (1 mg/m³)

Measurement Methods

NIOSH [6005](#) ;

OSHA [ID212](#)

[TOP](#)

See: [NMAM](#) or [OSHA Methods](#)

Physical Description

Violet solid with a sharp, characteristic odor.

Molecular Weight

253.8

Boiling Point

365°F

Melting Point

236°F

Solubility

0.01%

Vapor Pressure

(77°F): 0.3 mmHg

Ionization Potential

9.31 eV

Specific Gravity

4.93

Flash Point

NA

Upper Expositive Limit

NA

Lower Explosive Limit

NA

Noncombustible Solid

Incompatibilities & Reactivities

Ammonia, acetylene, acetaldehyde, powdered aluminum, active metals, liquid chlorine

Exposure Routes

inhalation, ingestion, skin and/or eye contact

Symptoms

irritation eyes, skin, nose; lacrimation (discharge of tears); headache; chest tightness; skin burns, rash; cutaneous hypersensitivity

Target Organs

Eyes, skin, respiratory system, central nervous system, cardiovascular system

Personal Protection/Sanitation

(See [protection codes](#))

Skin: Prevent skin contact

Eyes: Prevent eye contact

Wash skin: When contaminated

Remove: When wet or contaminated

Change: Daily

Provide: Eyewash (>7%), Quick drench (>7%)

First Aid

(See [procedures](#))

Eye: Irrigate immediately

Skin: Soap wash immediately

Breathing: Respiratory support

Swallow: Medical attention immediately

Respirator Recommendations

NIOSH/OSHA

Up to 1 ppm:

(APF = 10) Any supplied-air respirator*

Up to 2 ppm:

(APF = 25) Any supplied-air respirator operated in a continuous-flow mode*

(APF = 50) Any self-contained breathing apparatus with a full facepiece

(APF = 50) Any supplied-air respirator with a full facepiece

Emergency or planned entry into unknown concentrations or IDLH conditions:

(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:

(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted acid gas canister having an N100, R100, or P100 filter.

[Click here](#) for information on selection of N, R, or P filters.

Any appropriate escape-type, self-contained breathing apparatus

[Important additional information about respirator selection](#)

See also

[INTRODUCTION](#) [ICSC CARD: 0167](#) [MEDICAL TESTS: 0121](#)

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