

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 02/11/2010

Reviewed on 02/10/2010

1 Identification of substance:**Product details:****Product name:** Benzaldehyde**Stock number:**

A10348

L03193

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Benzaldehyde (CAS# 100-52-7)

Identification number(s):**EINECS Number:** 202-860-4**Index number:** 605-012-00-5**3 Hazards identification****Hazard description:**

Xn Harmful

Information pertaining to particular dangers for man and environment

R 22 Harmful if swallowed.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	2
REACTIVITY	1

Health (acute effects) = 1

Flammability = 2

Reactivity = 1

GHS label elements

Warning

3.1/4 - Harmful if swallowed.

Warning

2.6/4 - Combustible liquid.

Prevention:

Do not get in eyes, on skin, or on clothing.

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

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5 Fire fighting measures**Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents Water with full jet.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires: Keep ignition sources away.

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from air.

Store away from strong bases.

Further information about storage conditions:

Store under dry inert gas.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

This product is air sensitive.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace: Not required.

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

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Eye protection: Safety glasses
Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form: Liquid
Color: Colorless
Odor: Almond-like

Change in condition

Melting point/Melting range: -56°C (-69°F)
Boiling point/Boiling range: 178-179°C (352-354°F)
Sublimation temperature / start: Not determined

Flash point: 64°C (147°F)

Ignition temperature: 190°C (374°F)

Decomposition temperature: Not determined

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: Not determined
Upper: Not determined

Vapor pressure: Not determined

Density at 20°C (68°F): 1.047 g/cm³

**Solubility in / Miscibility with
 Water at 20°C (68°F):** 3.3 g/l

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents

Air

Bases

Alkali metals

Aluminum/aluminum alloys.

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	2020 mg/kg (mouse) 1300 mg/kg (rat)
	LDLo	714.3 mg/kg (human)
Dermal	LD50	>1250 mg/kg (rabbit)
Inhalative	LC50/4H	>3000 mg/m ³ /4H (rat)
Irritation of eyes	moderate	unknown mg (rabbit)

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Other information (about experimental toxicology):

Tumorigenic effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed on tests with human lymphocytes.

Mutagenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Local contact with benzaldehyde may cause dermatitis and act as a local anesthetic. May also act as a central nervous system depressant and in large doses it may cause convulsions.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - somnolence (general depressed activity).

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Behavioral - coma.
 Behavioral - tremor.
 Sense Organs and Special Senses (Eye) - conjunctive irritation.
 Lungs, Thorax, or Respiration - other changes.
 Lungs, Thorax, or Respiration - respiratory depression
 Lung, Thorax, or Respiration - cough.
 Related to Chronic Data - death.
 Brain and Coverings - other degenerative changes.
 Liver - fatty liver degeneration.
 Liver - changes in liver weight.
 Liver - multiple effects.
 Blood - changes in other cell count (unspecified)
 Blood - changes in erythrocyte (RBC) count.
 Nutritional and Gross Metabolic - weight loss or decreased weight gain.
 Kidney, Ureter, Bladder - changes in tubules (including acute renal failure, acute tubular necrosis).
 Gastrointestinal - ulceration or bleeding from small intestine.
 Gastrointestinal - tumors.
 Kidney, Ureter, Bladder - urine volume increased.
 Tumorigenic - neoplastic by RTECS criteria.
Additional toxicological information:
 To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
 No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:**

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information**DOT regulations:**

Hazard class: 9
Identification number: UN1990
Packing group: III
Proper shipping name (technical name): BENZALDEHYDE
Label: 9

Land transport ADR/RID (cross-border)

ADR/RID class: 9 (M11) Miscellaneous dangerous substances and articles
Danger code (Kemler): 90
UN-Number: 1990
Packaging group: III

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Description of goods: 1990 BENZALDEHYDE**Maritime transport IMDG:**

IMDG Class: 9
UN Number: 1990
Label 9
Packaging group: III
EMS Number: F-A, S-A
Marine pollutant: No
Proper shipping name: BENZALDEHYDE

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 9
UN/ID Number: 1990
Label 9
Packaging group: III
Proper shipping name: BENZALDEHYDE

UN "Model Regulation": UN1990, BENZALDEHYDE, 9, III**15 Regulations****Product related hazard informations:****Hazard symbols:**

Xn Harmful

Risk phrases:

22 Harmful if swallowed.

Safety phrases:

24 Avoid contact with skin.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use: For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent