

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 06/30/2009

Reviewed on 06/29/2009

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1 Identification of substance:

Product details:

Product name: Retinoic acid
Stock number: 44540

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#)

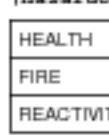
3,7-Dimethyl-9-(2,5,6-trimethyl-1-cyclohexen-1-yl)-2,4,6,8-tetraoxabicyclo[3.2.1]oct-2-ene (CAS# 302-79-4); 100%

Identification number(s):

EINECS Number: 206-129-0

3 Hazards identification

Hazard description:



Xn Harmful

Information pertaining to particular dangers for man and environment

R 22 Harmful if swallowed.

R 63 Possible risk of harm to the unborn child

Classification system:

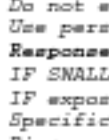
HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	1
FIRE	1
REACTIVITY	1

Health (acute effects) = 1
Flammability = 1
Reactivity = 1

GHS label elements



Danger

3.1/3 - Toxic if swallowed.



Warning

3.7/2 - Suspected of damaging fertility or the unborn child.

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use personal protective equipment as required.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

If exposed or concerned: Get medical advice/attention.

Specific treatment (see label).

Rinse mouth.

Storage:

Store locked up.

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Disposal: Dispose contents/container in accordance with local/regional/national/international regulations.

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.

5 Fire fighting measures

Suitable extinguishing agents

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

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:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

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:

Keep container tightly sealed.

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: Refrigerate

Information about storage in one common storage facility:

Store away from oxidizing agents.

Store in the dark.

Protect from heat.

Further information about storage conditions:

Keep container tightly sealed.

Protect from exposure to light.

Refrigerate

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:

Additional information: No data

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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.

Avoid contact with the eyes and skin.

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.

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information

Form:	Crystalline
Color:	Yellow
Odor:	Odorless
Change in condition	
Melting point/Melting range:	180-182°C (356-360°F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flash point:	Not applicable
Ignition temperature:	Not determined
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:	Not determined
Solubility in / Miscibility with	
Water:	Insoluble

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:

Light

Oxidizing agents

Heat

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	1100 mg/kg (mouse)
		2 gm/kg (rat)
Dermal	LD50	>2500 mg/kg (rabbit)
Irritation of skin	mild	0.05 %/48H (human)
		525 mg/21D-I (human)
		0.03 %/96H (human)
		0.05 %/24H (human)

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Primary irritant effect:

on the skin: Generally the product does not irritate the skin.

on the eye: May cause irritation

Sensitization: No sensitizing effects known.

Other information (about experimental toxicology):

Reproductive effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Subacute to chronic toxicity:

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

Behavioral - ataxia.

Behavioral - hallucinations, distorted perceptions.

Behavioral - convulsion (general depressed activity).

Behavioral - sleep.

Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - phosphatases.

Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - transaminases.

Biochemical - Metabolism (Intermediary) - Plasma proteins not involving coagulation.

Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - multiple enzyme effects.

Blood - normocytic anemia.

Blood - changes in erythrocytes (RBC) count.

Blood - changes in bone marrow (not otherwise specified).

Blood - hemorrhage.

Blood - changes in leukocytes (WBC) count.

Endocrine - changes in spleen weight.

Endocrine - changes in thymus weight.

Liver - changes in liver weight.

Liver - other changes.

Lungs, Thorax, or Respiration - respiratory depression.

Musculoskeletal - other changes.

Nutritional and Gross Metabolic - weight loss or decreased weight gain.

Related to Chronic Data - death.

Related to Chronic Data - changes in testicular weight.

Reproductive - Fertility - post-implantation mortality (e.g. dead/or resorbed implants per total number of implants).

Reproductive - Effects on Embryo or Fetus - fetal death.

Reproductive - Effects on Newborn - other neonatal measures or effects.

Reproductive - Effects on Newborn - viability index (e.g., % alive at day 4 per # born live).

Reproductive - Effects on Embryo or Fetus - cytological changes (including somatic cell genetic material).

Reproductive - Effects on Newborn - physical.

Reproductive - Specific Developmental Abnormalities - musculoskeletal system.

Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).

Reproductive - Specific Developmental Abnormalities - eye/ear.

Reproductive - Specific Developmental Abnormalities - craniofacial (including nose and tongue).

Reproductive - Maternal Effects - other effects.

Reproductive - Specific Developmental Abnormalities - Central Nervous System.

Reproductive - Effects on Newborn - weaning or lactation index (e.g., % alive at weaning per # alive at day 4).

Reproductive - Effects on Newborn - behavioral.

Reproductive - Specific Developmental Abnormalities - urogenital system.

Reproductive - Specific Developmental Abnormalities - gastrointestinal system.

Reproductive - Effects on Embryo or Fetus - other effects to embryo.

Reproductive - Specific Developmental Abnormalities - cardiovascular (circulatory) system.

Reproductive - Fertility - abortion.

Skin and Appendages - hair.

Skin and Appendages - photosensitivity (after systemic exposure).

Skin and Appendages - tumors.

Skin and Appendages - dermatitis, other (after systemic exposure).

Spinal Cord - other degenerative changes.

Tumorigenic - protects against induction of experimental tumors.

Tumorigenic - active as anti-cancer agent.

Tumorigenic - neoplastic by RTECS criteria.

None

Additional toxicological information:

Possible risk of harm to the unborn child.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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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 courses 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 packaging:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

Not a hazardous material for transportation.

DOT regulations:

Hazard class: None

Land transport ADR/RID (cross-border)

ADR/RID class: None

Maritime transport IMDG:

IMDG Class: None

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: None

Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

Product related hazard informations:

Hazard symbols:

Xn Harmful

Risk phrases:

22 Harmful if swallowed.

63 Possible risk of harm to the unborn child

Safety phrases:

36/37 Wear suitable protective clothing and gloves.

National regulations

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

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

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

Other regulations, limitations and prohibitive regulations

Although this chemical may sometimes be used as a food or drug or cosmetic, our products are not approved or authorized for such use or for human consumption.

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.

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)

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