Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 01/06/2010 Reviewed on 01/05/2010

1 Identification of substance:

Product details:

Product name: Hexanes, mixed isomers

Stock number: 19353

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#)
Hexanes, mixed isomers (CAS# 92112-69-1)
Identification number(s):
EINECS Number: 295-570-2

3 Hazards identification

Hazard description:

Xn Harmful
F Highly flammable
N Dangerous for the environment

Information pertaining to particular dangers for man and environment
R 11 Highly flammable.
R 38 Irritating to skin.
R 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R 62 Possible risk of impaired fertility
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R 65 Harmful: may cause lung damage if swallowed.
R 67 Vapours may cause drowsiness and dizziness
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)

HEALTH	*2
FIRE	3
REACTIVITY	1

Health (acute effects) = *2
Flammability = 3
Reactivity = 1

GHS label elements

Danger

2.6/2 - Highly flammable liquid and vapour.

Danger

3.10/1 - May be fatal if swallowed and enters airways.
3.7/2 - Suspected of damaging fertility or the unborn child.
3.9/2 - May cause damage to organs through prolonged or repeated exposure.

Warning

3.2/2 - Causes skin irritation.
3.8/3 - May cause drowsiness or dizziness.

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4.1/2 - Toxic to aquatic life with long lasting effects.
Prevention:
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Take precautionary measures against static discharge.
Avoid release to the environment.
Wear protective gloves/clothing.
Response:
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
Get immediate medical advice/attention.

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 CO2, sand, extinguishing powder. Do not use water.
For safety reasons unsuitable extinguishing agents Water
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
Keep away from ignition sources
Measures for environmental protection:
Inform respective authorities in case of seepage into water course or sewage system.
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.
Ensure adequate ventilation.
Keep away from ignition sources.
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.
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.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

Storage
Requirements to be met by storerooms and receptacles: Store in a cool location.

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Information about storage in one common storage facility:
Store away from oxidizing agents.
Store away from halogens.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

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:

Cyclohexane

	ppm
ACGIH TLV	300
Austria MAK	300
Belgium TWA	300
Denmark TWA	200
Finland TWA	300; 375-STEL
France VME	300; 375-VLE
Germany MAK	300
Hungary TWA	500 mg/m3; 1000 mg/m3-STEL
Japan OEL	150
Korea TLV	300
Netherlands MAC-TGG	250
Norway TWA	150
Poland TWA	300 mg/m3; 1000 mg/m3-STEL
Russia TWA	150; 80-STEL
Sweden NGV	300; 370-KTV
Switzerland MAK-W	300; 600-KZG-W
United Kingdom TWA	100; 300-STEL
USA PEL	300

Benzene

		mg/m3	ml/m3
ACGIH	TLV short term	1.6	0.5
ACGIH	TLV long term	8	2.5
B	VME	1,6	0,5
CH	MAK	3,2	1
D	TRGS 900	3,2	1
DK	GV	16	5
F	VME	16	5
GB	MEL	16	5
I	VME	1,6	0,5
N	TLV	3	1
NL	MAC-TGG	30	10
P	VME	1,6	0,5
S	NGV	1,5	0,5
SF	HTP	16	
USA	PEL short term	3	1 ppm
USA	PEL long term	15	5 ppm

Hexane isomers, other than n-hexane

	ppm
ACGIH TLV	500; 1000-STEL
Belgium TWA	500; 1000-STEL
Denmark TWA	300
Finland TWA	500; 625-STEL
France TWA	500
Germany TWA	200
Ireland TWA	500; 1000-STEL
Sweden TWA	200; 300-STEL
Switzerland TWA	500

n-Hexane

	ppm
ACGIH TLV	50 (skin)
Austria MAK	50
Belgium TWA	50
Denmark TWA	25
Finland TWA	50; 150-STEL
France VME	50

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Germany MAK	50
Hungary TWA	100; 200-STEL
Japan OEL	40 (skin)
Korea TLV	50 (skin)
Netherlands MAC-TGG	25
Norway TWA	25
Poland TWA	100; 400-STEL
Russia TWA	40; 300-STEL
Sweden NGV	25; 50-KTV
Switzerland MAK-W	50; 100-KZG-W
United Kingdom TWA	20
USA PEL	500

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.
Store protective clothing separately.
Breathing equipment: Use suitable respirator when high concentrations are present.
Protection of hands: Impervious gloves
Eye protection: Safety glasses
Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information	
Form:	Liquid
Color:	Colorless
Odor:	Mild
Change in condition	
Melting point/Melting range:	-95°C (-139°F)
Boiling point/Boiling range:	65-70°C (149-158°F)
Sublimation temperature / start:	Not determined
Flash point:	< -23°C (< -9°F)
Ignition temperature:	280°C (536°F)
Decomposition temperature:	Not determined
Explosion limits:	
Lower:	1.2 Vol %
Upper:	8.3 Vol %
Vapor pressure at 20°C (68°F):	160 hPa (120 mm Hg)
Density at 20°C (68°F):	0.67 g/cm³
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix
Viscosity:	
dynamic at 20°C (68°F):	0.31 mPas

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
Halogens
Dangerous reactions Reacts with strong oxidizing agents
Dangerous products of decomposition: Carbon monoxide and carbon dioxide

11 Toxicological information

Acute toxicity:
Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.
on the eye: May cause irritation

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Sensitization: No sensitizing effects known.
Subacute to chronic toxicity:
n-Hexane causes skin irritation, CNS effects, lung irritation, headache, dizziness, drowsiness, Repeated or prolonged exposure to the vapor can cause peripheral polyneuropathy. Symptoms include incoordination, slowed reaction time, blurred vision, slurred speech, facial numbness, loss of senstaiion. Gradual recovery is normally found after removal from exposure. Also causes reproductive effects in laboratory animals.
Subacute to chronic toxicity:
Cyclohexane causes irritation of the skin, eyes and respiratory tract. High concentrations have a narcotic effect. In animals, chronic exposure to cyclohexane has caused general vascular damage and lesions of the brain and vicera.
Hexanes may cause skin irritation, CNS effects, lung irritation, headache, dizziness, drowsiness.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
Possible risk of impaired fertility.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

Ecotoxical effects:
Remark: Toxic for fish
General notes:
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Do not allow material to be released to the environment without proper governmental permits.
Toxic for aquatic organisms

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:	3
Identification number:	UN1208
Packing group:	II
Proper shipping name (technical name):	HEXANES
Label	flammable liquid
Remarks:	Special marking with the symbol (fish and tree).

Land transport ADR/RID (cross-border)

ADR/RID class:	3 (F1) Flammable liquids
Danger code (Kemler):	33
UN-Number:	1208
Packaging group:	II
Special marking:	Symbol (fish and tree)

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Description of goods:	1208 HEXANES

Maritime transport IMDG:

IMDG Class:	3
UN Number:	1208
Label	3
Packaging group:	II
Marine pollutant:	Yes (P) Symbol (fish and tree)
Proper shipping name:	HEXANES

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class:	3
UN/ID Number:	1208
Label	3
Packaging group:	II
Proper shipping name:	HEXANES

UN "Model Regulation": UN1208, HEXANES, 3, II
Environmental hazards: Environmentally hazardous substance, liquid; Marine Pollutant

15 Regulations

Product related hazard informations:

Hazard symbols:
Xn Harmful
F Highly flammable
N Dangerous for the environment

Risk phrases:
11 Highly flammable.
38 Irritating to skin.
48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
62 Possible risk of impaired fertility
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
65 Harmful: may cause lung damage if swallowed.
67 Vapours may cause drowsiness and dizziness

Safety phrases:
9 Keep container in a well-ventilated place.
16 Keep away from sources of ignition - No smoking.
29 Do not empty into drains.
33 Take precautionary measures against static discharges.
36/37 Wear suitable protective clothing and gloves.
61 Avoid release to the environment. Refer to special instructions/Safety data sheets
62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

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

16 Other information:

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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)
P: Marine Pollutant
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)