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High Range- Soil Test Kit

Material Safety Data Sheets

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Safety Data Sheet
According to OSHA and ANSI

Printing date 11/12/2012 Reviewed on 01/05/2012

1 Identification of the substance/mixture and of the company/undertaking

Product identifier
Product name: Aluminum chloride
Stock number: 88488
CAS Number:
7446-70-0
EC number:
231-208-1
Index number:
013-003-00-7
Relevant identified uses of the substance or mixture and uses advised against.
Sector of Use SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department
Emergency telephone number:
During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazards identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

C; Corrosive

R34: Causes burns.
Information concerning particular hazards for human and environment: Not applicable

Label elements
Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labelled according to the CLP regulation.
Hazard pictograms

GHS05

Signal word Danger
Hazard statements
H314 Causes severe skin burns and eye damage.
Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard description:
WHMIS classification
D2B - Toxic material causing other toxic effects

(Contd. on page 2)
USA

(Contd. of page 1)

E - Corrosive material

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

HEALTH	3
FIRE	0
REACTIVITY	1

Health (acute effects) = 3
Flammability = 0
Reactivity = 1

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
7446-70-0 Aluminium chloride, anhydrous
Identification number(s):
EC number: 231-208-1
Index number: 013-003-00-7

4 First aid measures

Description of first aid measures
General information Immediately remove any clothing soiled by the product.
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 medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed
No further relevant information available.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Firefighting measures

Extinguishing media
Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water.
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Metal oxide fume
Hydrogen chloride (HCl)
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.

(Contd. on page 3)

USA

(Contd. of page 2)

Ensure adequate ventilation.
Reference to other sections
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
Precautions 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: The product is not flammable

Conditions for safe storage, including any incompatibilities
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 strong bases.
Store in the dark.
Store away from water/moisture.
Further information about storage conditions:
Store under dry inert gas.
This product is moisture sensitive.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from humidity and water.
Protect from exposure to light.
Specific end use(s) No further relevant information available.

8 Exposure controls/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.

Control parameters

Components with limit values that require monitoring at the workplace:	
7446-70-0 Aluminium chloride, anhydrous (100.0%)	
REL (USA)	2 mg/m³ as Al
TLV (USA)	1* mg/m³ as Al;*as respirable fraction
EL (Canada)	2 mg/m³ as Al

Additional information: No data

Exposure controls
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.
Maintain an ergonomically appropriate working environment.
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.
The selection of suitable gloves not only depends on the material, but also on quality.
Quality will vary from manufacturer to manufacturer.
Eye protection:
Tightly sealed goggles
Full face protection
Body protection: Protective work clothing.

(Contd. on page 4)

(Contd. of page 3)

9 Physical and chemical properties

Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Powder or granules
Color:	Yellow to gray
Odor:	Pungent
Odor threshold:	Not determined.
pH-value (100 g/l) at 20°C (68 °F):	2.4
Change in condition	
Melting point/Melting range:	190°C (374 °F) (subl)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure at 20°C (68 °F):	0.00003 hPa
Density at 20°C (68 °F):	2.44 g/cm³ (20.362 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Reacts with water forming hydrochloric acid (HCl)
Segregation coefficient (n-octonol/water):	Not determined.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity
Chemical stability
Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions Reacts with water forming hydrochloric acid (HCl)
Incompatible materials:
Bases
Water/moisture
Light
Hazardous decomposition products:
Metal oxide fume
Hydrogen chloride (HCl)

11 Toxicological information

Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:		
Oral	LD50	1130 mg/kg (mouse)
		3450 mg/kg (rat)
Dermal	LD50	>2 gm/kg (rabbit)

Primary irritant effect:
on the skin: Corrosive effect on skin and mucous membranes.
on the eye: Strong corrosive effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

(Contd on page 5)

USA

(Contd. of page 4)

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute and/or other multiple dose toxicity data for components in this product.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive and/or mutation data for components in this product.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional 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.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods
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

UN-Number	
DOT, ADR, IMDG, IATA	UN1726
UN proper shipping name	
DOT, IMDG, IATA	ALUMINIUM CHLORIDE, ANHYDROUS
ADR	1726 ALUMINIUM CHLORIDE, ANHYDROUS
Transport hazard class(es)	
DOT	

Class	8 Corrosive substances.
Label	8
ADR	

Class	8 (C2) Corrosive substances
Label	8
IMDG, IATA	

Class	8 Corrosive substances.
Label	8
Packing group	
DOT, ADR, IMDG, IATA	II

(Contd. on page 6)

(Contd. of page 5)

Environmental hazards:	
Marine pollutant:	No
Special precautions for user	Warning: Corrosive substances
Danger code (Kemler):	80
EMS Number:	F-A,S-B
Segregation groups	Acids
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	UN1726, ALUMINIUM CHLORIDE, ANHYDROUS, 8, II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
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.
Other regulations, limitations and prohibitive regulations
Substances of very high concern (SVHC) according to REACH, Article 57
Substance is not listed.
REACH - Pre-registered substances Substance is listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 C. Holt
Global EHS Manager
Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organization
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

Safety Data Sheet

According to OSHA and ANSI

Printing date 01/31/2013 Reviewed on 11/09/2007

1 Identification of the substance/mixture and of the company/undertaking

Product identifier
Product name: n-Heptane
Stock number: 32441
CAS Number:
142-82-5
EC number:
205-563-8
Index number:
601-008-00-2

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department
Emergency telephone number:
During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazards identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

GHS07

Skin Irrit. 2 H315 Causes skin irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xn; Harmful

R65: Harmful: may cause lung damage if swallowed.

Xi; Irritant

R38: Irritating to skin.

F; Highly flammable

R11: Highly flammable.

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R67: Vapours may cause drowsiness and dizziness.

Information concerning particular hazards for human and environment:
Causes a narcotic effect.

Label elements
Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labelled according to the CLP regulation.

(Contd. on page 2)

Safety Data Sheet
According to OSHA and ANSI

Printing date 01/31/2013 Reviewed on 11/09/2007

Product name: n-Heptane

(Contd. of page 1)

Hazard pictograms

GHS02 GHS07 GHS08

Signal word Danger

Hazard statements

H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H304 May be fatal if swallowed and enters airways.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard description:

WHMIS classification

B2 - Flammable liquid
D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	1
FIRE	3
REACTIVITY	1

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

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

142-82-5 n-Heptane

Identification number(s):

EC number: 205-563-8
Index number: 601-008-00-2

4 First aid measures

Description of 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 medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed

Headache
Dizziness
Nausea

(Contd. on page 3)

Safety Data Sheet
According to OSHA and ANSI

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Product name: n-Heptane

(Contd. of page 2)

Unconsciousness
Gastric or intestinal disorders.
Danger If swallowed or in case of vomiting, danger of entering the lungs.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Firefighting measures

Extinguishing media
Suitable extinguishing agents
Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide (CO)
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
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.
Reference to other sections
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
Precautions 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:
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: Store in a cool location.
Information about storage in one common storage facility: Store away from oxidizing agents.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Specific end use(s) No further relevant information available.

8 Exposure controls/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.

Control parameters
Components with limit values that require monitoring at the workplace:

n-Heptane

	ppm
ACGIH TLV	400; 500-STEL
Austria MAK	500
Belgium TWA	400; 500-STEL

(Contd. on page 4)

Safety Data Sheet
According to OSHA and ANSI

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Product name: n-Heptane

(Contd. of page 3)

Denmark TWA	200
Finland TWA	300; 500-STEL
France VME	400
Germany MAK	500
Japan OEL	200
Korea TLV	400; 500-STEL
Netherlands MAC-TGG	400
Norway TWA	200
Poland TWA	1200 mg/m3; 2000 mg/m3-STEL
Russia TWA	200
Sweden NGV	200; 300-KTV
Switzerland MAK-W	400; 800-KZG-W
United Kingdom	400-LTEL; 500-STEL
USA PEL	500

142-82-5 n-Heptane (100.0%)	
PEL (USA)	2000 mg/m³, 500 ppm
REL (USA)	Short-term value: C 1800* mg/m³, C 440* ppm Long-term value: 350 mg/m³, 85 ppm *15-min
TLV (USA)	Short-term value: 2050 mg/m³, 500 ppm Long-term value: 1640 mg/m³, 400 ppm
EL (Canada)	Short-term value: 500 ppm Long-term value: 400 ppm
EV (Canada)	Short-term value: 2.045 mg/m³, 500 ppm Long-term value: 1.635 mg/m³, 400 ppm

Additional information: No data

Exposure controls
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 skin.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.
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.
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

Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Liquid
Color:	Colorless
Odor:	Petroleum-like
Odor threshold:	Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	-90.6°C (-131 °F)
Boiling point/Boiling range:	98.4°C (209 °F)
Sublimation temperature / start:	Not determined
Flash point:	-1°C (30 °F)
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	215°C (419 °F)
Decomposition temperature:	Not determined
Auto igniting:	Not determined.
Explosion limits:	
Lower:	1.05 Vol %
Upper:	6.7 Vol %

(Contd. on page 5)

Safety Data Sheet
According to OSHA and ANSI

Printing date 01/31/2013 Reviewed on 11/09/2007

Product name: n-Heptane

(Contd. of page 4)

Vapor pressure at 22°C (72 °F):	53 hPa (40 mm Hg)
Density at 20°C (68 °F):	0.6795 g/cm³ (5.67 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity
Chemical stability
Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions No dangerous reactions known
Incompatible materials: Oxidizing agents
Hazardous decomposition products: Carbon monoxide and carbon dioxide

11 Toxicological information

Information on toxicological effects
Acute toxicity:
Primary irritant effect:
on the skin: Irritating effect.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Subacute to chronic toxicity:
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Subacute to chronic toxicity:
Ingestion of n-heptane may cause abdominal pain and nausea. Causes skin and eye irritation. Inhalation may produce light headedness, dizziness, muscle incoordination, loss of appetite and nausea. Higher concentrations may cause CNS depression, narcosis and unconsciousness.
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

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Very toxic for aquatic organisms
Additional ecological information:
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.
May cause long lasting harmful effects to aquatic life.
Very toxic for aquatic organisms
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

(Contd. on page 6)

Safety Data Sheet
According to OSHA and ANSI

Printing date 01/31/2013 Reviewed on 11/09/2007

Product name: n-Heptane

(Contd. of page 5)

13 Disposal considerations

Waste treatment methods
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

UN-Number	
DOT, ADR, IMDG, IATA	UN1206
UN proper shipping name	
DOT, IMDG, IATA	HEPTANES
ADR	1206 HEPTANES, ENVIRONMENTALLY HAZARDOUS
Transport hazard class(es)	
DOT	
	
Class	3 Flammable liquids.
Label	3
ADR	
	
Class	3 (F1) Flammable liquids
Label	3
IMDG, IATA	
	
Class	3 Flammable liquids.
Label	3
Packing group	
DOT, ADR, IMDG, IATA	II
Environmental hazards:	Environmentally hazardous substance, liquid; Marine Pollutant
Marine pollutant:	No
Special marking (ADR):	Symbol (fish and tree)
Special precautions for user	Warning: Flammable liquids
Danger code (Kemler):	33
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	UN1206, HEPTANES, ENVIRONMENTALLY HAZARDOUS, 3, II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
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.
This substance is subject to a Significant New Use Rule (SNUR) promulgated under Section 5(a)(2) of the Toxic Substances Control Act (TSCA). See 40 CFR 721. This product is being sold for research and development use.

(Contd. on page 7)

Safety Data Sheet
According to OSHA and ANSI

Printing date 01/31/2013 Reviewed on 11/09/2007

Product name: n-Heptane

(Contd of page 6)

Other regulations, limitations and prohibitive regulations
Substances of very high concern (SVHC) according to REACH, Article 57
Substance is not listed.
REACH - Pre-registered substances Substance is listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 C. Holt
Global EHS Manager
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)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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)
WHMIS: Workplace Hazardous Materials Information System (Canada)