

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Trade name	: Primary Reference Fuel n-Cetane (n-hexadecane)
Chemical name	: n-Hexadecane
CAS-No.	: 544-76-3
Product code	: HF 3025
Formula	: C16H34
Synonyms	: n-Hexadecane

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Fuel for engine development and testing
------------------------------	---

1.3. Supplier

Haltermann Solutions™
 15600 West Hardy Rd.
 Houston, TX 77060 - USA
 T 1-800-969-2542 - F 281-457-1469
gdunford@haltermann.com

1.4. Emergency telephone number

Emergency number	: 24 HR CHEMTREC: 1-800-424-9300; Emergency Assistance: 1-800-969-2542 (8 AM to 5 PM CDT)
------------------	---

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2B	H320	Causes eye irritation
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H304 - May be fatal if swallowed and enters airways
 H315 - Causes skin irritation
 H320 - Causes eye irritation

Precautionary statements (GHS-US)

: P264 - Wash hands thoroughly after handling.
 P280 - Wear eye protection, protective clothing, protective gloves.
 P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER
 P302+P352 - If on skin: Wash with plenty of water
 P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P321 - Specific treatment (see Consult a doctor/medical service if you feel unwell on this label)
 P331 - Do NOT induce vomiting.
 P332+P313 - If skin irritation occurs: Get medical advice/attention.
 P337+P313 - If eye irritation persists: Get medical advice/attention.
 P362+P364 - Take off contaminated clothing and wash it before reuse.
 P405 - Store locked up.
 P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

Primary Reference Fuel n-Cetane (n-hexadecane)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%
n-Hexadecane (Main constituent)	(CAS-No.) 544-76-3	> 99

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Mild eye irritation.
Symptoms/effects after ingestion	: Risk of lung edema.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

Primary Reference Fuel n-Cetane (n-hexadecane)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Clear, colorless liquid.
- Color : Colorless
- Odor : No data available
- Odor threshold : No data available
- pH : No data available
- Melting point : Not applicable
- Freezing point : 18.18 °C
- Boiling point : 286.5 °C
- Flash point : 135 °C closed cup
- Relative evaporation rate (butyl acetate=1) : No data available
- Flammability (solid, gas) : Not applicable.
- Vapor pressure : 0.00149 mm Hg at 25°C
- Relative vapor density at 20 °C : 7.8
- Relative density : 0.7701
- Molecular mass : 226.44 g/mol
- Solubility : No data available
- Log Pow : 8.2
- Auto-ignition temperature : 205 °C
- Decomposition temperature : No data available
- Viscosity, kinematic : No data available

Primary Reference Fuel n-Cetane (n-hexadecane)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Viscosity, dynamic	: 3.474 mPa.s at 20°C
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

n-Hexadecane (544-76-3)	
LD50 oral rat	> 5000 mg/kg body weight
LD50 dermal rat	> 3160 mg/kg body weight
LC50 inhalation rat (mg/l)	> 5000 mg/m ³

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Mild eye irritation.
Symptoms/effects after ingestion	: Risk of lung edema.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

n-Hexadecane (544-76-3)	
LC50 fish 1	> 1028 mg/l
EC50 Daphnia 1	> 3193 mg/l

12.2. Persistence and degradability

No additional information available

Primary Reference Fuel n-Cetane (n-hexadecane)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.3. Bioaccumulative potential

n-Hexadecane (544-76-3)

Log Pow	8.2
---------	-----

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

n-Hexadecane (544-76-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

n-Hexadecane (544-76-3)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

n-Hexadecane (544-76-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

n-Hexadecane (544-76-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

No additional information available

Primary Reference Fuel n-Cetane (n-hexadecane)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 16: Other information

Revision date : 05/04/2018

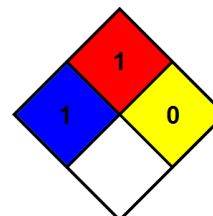
Full text of H-phrases:

H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H320	Causes eye irritation

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



SDS US (GHS HazCom 2012)

This information is furnished without warranty, expressed or implied except that it is accurate to the best knowledge of Haltermann Solutions™. The data on this sheet are related only to the specific material herein. Haltermann Solutions™ assumes no responsibility for the use or reliance upon these data.