



HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA REFINERY

MATERIAL SAFETY DATA SHEET

MSDS of HFHSD

Section 1: Chemical Product and Company Identification

1.1 Chemical Product Identifiers:

1.1.1 Chemical Name	HFHSD
1.1.1.1 Trade Name	HFHSD
1.1.2 CAS No.	68334-30-5

1.2 Relevant identified uses of the chemical product and uses advised against:

Relevant identified uses	Fuels
Uses advised against	Not Available

1.3 Details of the supplier of the safety data sheet:

1.3.1 Company Name	Hindustan Petroleum Corporation Limited
1.3.2 Address	Malkapuram, Visakhapatnam- 530011
1.3.3 Contact No.	Fire & Safety Shift Supervisor
1.3.4 Contact person in emergency	(0891)2894843, (0891) 2894848, 2894849

1.4 Emergency Telephone No.:

(0891) 2894444, 2894445

Section 2: Composition/Information on Ingredients

2.1 Name of Product: HFHSD

2.1.1 Systematic Chemical Name or Trivial Name: HFHSD

2.1.2 CAS No.: 68334-30-5

2.1.3 Other Identifiers

Molar mass

198-202 g/mol

Section 3: Hazards Identification

3.1 Classification of the chemical product:

Hazard class	Category	Hazard class & category	Hazard statement
Flammable liquid and vapour	3	Flam. Liq. 3	H226
Skin corrosion/irritation	2	Skin Irrit. 2	H315
Acute toxicity	4	Acute Tox.4	H332
Carcinogenicity	2	Carc. 2	H351
Specific target organ toxicity single exposure (narcotic effects, drowsiness)	3	STOT SE 3	H336



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Specific target organ toxicity repeated exposure	2	STOT RE 2	H373
Aspiration hazard	1	Asp. Tox. 1	H304
Hazardous to the aquatic environment chronic hazard	2	Aquatic Chronic 2	H411
Serious Eye Damage/Irritation	2	Eye Irr. 2	H319

3.2 Label Elements:

Labelling according to Regulation (EC) No 1272/2008 (CLP)

3.2.1 GHS pictograms:



GHS02GHS07GHS08GHS09

3.2.2 Signal Word(s): Danger

3.2.3 Hazard Statements(s):

H226 Flammable liquid and vapour
H304 May be fatal if swallowed and enters airways
H315 Causes skin irritation
H332 Harmful if inhaled
H336 May cause drowsiness or dizziness
H351 Suspected of causing cancer
H373 May cause damage to organs (nervous system) through prolonged or repeated exposure (if inhaled)
H319 May cause eye damage/irritation
H411 Toxic to aquatic life with long lasting effects

3.2.4 Precautionary Statement(s):

Precautionary statements - prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking
P260	Do not breathe mist, vapours, spray, gas, fume
P273	Avoid release to the environment
P280	Wear protective gloves/eye protection

Precautionary statements - response

P301+P310+P331	IF SWALLOWED: Immediately call a POISON CENTER, doctor. Do NOT induce vomiting
P303+361+353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse with water/shower



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P391

Collect spillage

P308+P313

IF exposed or concerned: Get medical advice/attention

3.3 Other hazards except those mentioned in DGCPL Rules, 201: Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Section 4: First-Aid Measures

4.1 Description of first aid measures



4.1.1 Inhalation

Remove person to fresh air. If person is not breathing, ensure an open airway and provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately

4.1.2 Skin Contact

Remove contaminated clothing and shoes. After contact with skin, wash immediately with plenty of water and soap. In case of doubt or persistent symptoms, consult always a physician. In the event of a high pressure injection injury, worker should obtain immediate medical assistance

4.1.3 Eye Contact

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention. In case of contact lenses, remove immediately

4.1.4 Ingestion

Do not induce vomiting. Rinse mouth immediately and drink plenty of water. Get immediate medical advice/attention

4.2 Most important symptoms and anticipated effects both acute and delayed Aspiration hazard, Irritation, Skin contact, Eyes contact

4.3 Advice for immediate medical attention and special treatment needed

None

Section 5: Firefighting Measures

5.1 Extinguishing Media





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- **Suitable extinguishing media**
Water spray, Dry powder, Foam
- **Unsuitable extinguishing media**
Strong water jet

5.2 Special hazards arising from the chemical product:

Vapours are heavier than air and may spread along floors. On heating there is a risk of a build-up of pressure in hermetically sealed containers or tanks. Do not allow run off from fire-fighting to enter drains or water courses.

5.3 Hazardous Combustion Products:

In case of fire may be liberated: Carbon oxides (CO, CO₂), Hydrogen sulphide, Sulphur oxides

5.4 Specific Extinguishing Methods

For this substance/mixture no limitations of extinguishing agents are given

5.4.1 Advice for Fire-Fighters

Special protective equipment for firefighters. In case of fire: Wear self-contained breathing apparatus. Use water spray or fog for cooling exposed containers. Evacuate personnel to a safe area. Collect contaminated fire extinguishing water separately. This must not be discharged into drains

5.4.2 Special protective equipment for fire-fighters: Isolate area around container involved in fire

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:



Advice for non-emergency personnel: Do not breathe vapours/aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

6.2 Environmental precautions:

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. Danger of explosion.

6.3 Methods and materials for containment and cleaning up:

Advice on how to contain a spill

Stop the source of the spill.

Advice on how to clean up a spill

Absorb with liquid-binding material (sand, non-combustible, inert oil absorbing materials).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections:

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.



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Section 7: Handling and Storage

7.1 Precautions for Safe Handling:

Provision of sufficient ventilation. Avoid exposure.

Measures to prevent fire as well as aerosol and dust generation

Keep away from sources of ignition - No smoking. Provide sufficient air exchange and/or exhaust in work rooms.



Measures to protect the environment

Avoid release to the environment.

7.2 Conditions for Safe Storage, including requirement of hazardous area classification and any incompatibilities:

Store in a well-ventilated place. Keep container tightly closed in a cool

Incompatible substances or mixtures

A specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances

Consideration of other advice:

Ensure proper process control to avoid excess waste discharge.

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Keep only in the original container. Steel, Stainless steel

Section 8: Exposure Controls and Personal Protection

8.1 Control Parameters:

National Limit Values

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier No	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling -C [ppm]	Ceiling -C [mg/m ³]	Notation
USA	HFHSD	68334-30-5	ACGIH	0.1	100					



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Notation

- Ceiling-C: Ceiling value is a limit value above which exposure should not occur
- STEL: Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
- TWA: Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours' time-weighted average (unless otherwise specified)

Human health values

Relevant DNELs and other threshold levels

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	4300 mg/m ³	human, inhalatory	worker (industry)	Acute - systemic effects
DNEL	2.9 mg/kg bw/ day	human, dermal	worker (industry)	Long-term - systemic effects
DNEL	68 mg/m ³	human, inhalatory	worker (industry)	Long-term - systemic effects
DNEL	2600 mg/kg bw/day	human, inhalatory	general population	Acute - systemic effects
DNEL	20 mg/m ³	human, inhalatory	general population	Long-term - systemic effects
DNEL	1.3 mg/kg bw/ day	human, dermal	general population	Long-term - systemic effects

DNEL: Derived No Effect Level

8.2 Exposure Controls

8.2.1 Personal Protective Equipment:

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

8.2.2 Suggestions for protection of eye, skin and body and respiratory system:

• Eye/face protection



Use safety goggle with side protection.

• Skin protection



a. Hand protection



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The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.

b. Type of material

NBR (Nitrile rubber)

c. Material thickness

≥0.54 mm

d. Breakthrough times of the glove material

>240 minutes

e. Other protection measures

Wear suitable coveralls to prevent exposure to the skin, Protective helmets, antistatic boots

Respiratory protection: Respiratory protection necessary at: Type: A



8.2.3 Environmental Exposure Controls:

Avoid release to the environment. Comply with applicable Community environmental protection legislation.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	yellow
Odour	Petroleum hydrocarbon odour.
Melting point/freezing point	-22 to -0.4 °F (-30 to -18 °C)
Boiling point or initial boiling point and boiling range	320 to 690 °F (160 to 366 °C)
Flammability	Flammable liquid
Lower and upper explosion limit	0.6 vol% (LEL) - 6.5vol% (UEL)
Flash point	66 °C PMCC
Pour point	+3(Winter) +15(Summer)
Auto-ignition temperature	494 °F (257 °C)
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	2-5 cst @ 40°C



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Cetane Index	46
Solubility(ies) Water solubility	Insoluble
Partition coefficient Partition coefficient n-octanol/water (log value):	Log Kow range of 3.3 to >.6.0
Vapour pressure	0.009 psia @ 70 °F
Density and/or relative density Density	810-845 kg/m ³
Relative vapour density	>1
Particle characteristics	not relevant (liquid)
Other safety parameters Oxidising properties	25 g/m ³
9.2 Other Information: Information with regard to physical hazard classes: There is no additional information.	

Section 10: Stability and Reactivity

10.1 Reactivity

Material is not self-reacting. Flammable concentrations may be present in air. Compound can react with oxidizing materials

10.2 Hazardous decomposition products

10.2 Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3 Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Avoid high temperatures, open flames, sparks, static electricity, welding, smoking and other ignition sources.

10.5 Incompatible materials

Keep away from strong oxidizers such as nitric and sulphuric acids.

10.6 Hazardous decomposition products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).



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Section 11: Toxicological Information

11.1 Information on Toxicological Effects:

Symptoms related to the physical, chemical, and toxicological characteristics

- **If in eyes**

Causes serious eye irritation

- **If on skin**

Causes skin irritation.

- **Other information**

None

11.1.1 Acute Toxicity:

Exposure route	Endpoint	Value	Species
Inhalation	LC50	6 mg/l/4h	rat
Oral	LD50	> 5000 mg/kg	rabbit
Dermal	LD50	>5000 mg/kg	rabbit

11.1.2 Skin Corrosion/ Irritation:

 Causes skin irritation.

11.1.3 Serious Eye Damage/ Eye Irritation:

 Causes serious eye irritation.

11.1.4 Respiratory or Skin Sensitization:

 Shall not be classified as a respiratory or skin sensitizer.

11.1.5 Mutagenicity:

 Shall not be classified as germ cell mutagenic.

11.1.6 Carcinogenicity:

 Suspected of causing cancer.

11.1.7 Reproductive Toxicity:

 Not Classified.

11.1.8 Specific target organ toxicity-single exposure:

 May cause drowsiness or dizziness.

11.1.9 Specific target organ toxicity - repeated exposure:

 May cause damage to organs (nervous system) through prolonged or repeated exposure (if inhaled).

11.1.10 Aspiration Hazard:

 May be fatal if swallowed and enters airways.

11.1.11 Additional Information:

 Symptoms related to the physical, chemical and toxicological characteristics. Reference to other sections: 4.2.

Section 12: Ecological Information

12.1 Toxicity:

 Toxic to aquatic life with long lasting effects.

Endpoint	Value	Species	Exposure time
LL50	21 mg/l	fish	96 h
EL50	68 mg/l	aquatic invertebrates	48 h
IL50	22 mg/l	aquatic algae	72 h
NOEL	0.21 mg/l	aquatic invertebrates	14 days
NOEL	0.083 mg/l	Fish	

12.2 Persistence and Degradability:

 Not applicable



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12.3 Bio Accumulative Potential: Not applicable

12.4 Mobility in Soil: Not available

12.5 Other adverse effects: Do not allow to enter into surface water or drains

Section 13: Disposal considerations

13.1 Waste Treatment Method: This material and its container must be disposed of as hazardous waste. Dispose of contents/container local/regional/national/international regulations.



- Sewage disposal-relevant information**

Do not burn, or use a cutting torch on the empty drum. Do not puncture or incinerate

13.1.1 Contaminated Packaging: Never use pressure to empty container.

13.1.2 Local Regulations (if any) on Disposal: Waste material must be disposed of in accordance with the Hazardous Waste Management Rules-2016

Section 14: Transport Information

14.1 UN Number: UN 1202

14.2 UN Proper Shipping Name: Diesel Fuel

14.3 Transport Class(es): 3

14.3.1 Hazard Labels: 9

14.3.2 Symbols:



14.4 Packaging Group: III

14.5 Environmental Hazards: NO

14.6 Special Precautions for User: Provisions for dangerous goods (ADR) should be complied within the premises.

Section 15: Regulatory Information

15.1 Safety, health and Environmental: Regulations/legislation specific for the substance or mixture relevant provisions of **Non-Toxic/Flammable Substance are applicable**



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Section 16: Other Information

16.1 Date of Issue:

16.2 Necessity of Specific Training: Working and handling personnel to be trained on following aspects

- i. Chemical hazard awareness
- ii. Safety control measures including PPE
- iii. Housekeeping, hygiene and chemical storage
- iv. Responding to any kind of emergency

16.3 Disclaimer: This M.S.D.S and the information it contains is offered to you in good faith as accurate. We believe that information to be correct but cannot guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents.