Ethanol fuel treatment

Safety Data Sheet

According to SANS 10234:2008 and SANS 11014:2010

Issue date:03/03/2020 Revision date: 03/03/2022 : Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product form	:	Mixture
Trade name	:	Ethanol fuel treatment
Type of product	:	Additive
Product code	:	SH760
Product group	:	Trade product

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Supplier's details

Manufacturer
Shield Chemicals (Pty) Ltd
9 London Rd
Apex
P.O. Box 1939
1501 Benoni - South Africa
T (011) 421 7111
info@shieldchem.co.za

1.4. Emergency telephone number

Emergency number : (011) 421 7111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Flammable liquids, Category 1	H224
Acute toxicity (dermal), Category 5	H313
Skin corrosion/irritation, Category 2	H315
Specific target organ toxicity — Single exposure, Category 3, Narcosis	H336
Specific target organ toxicity — Repeated exposure, Category 2	H373
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

Full text of H statements : see section 16

2.2. Label elements

Labelling according to the United Nations GHS

Hazard pictograms (GHS-ZA) :

GHS02 GHS07 GHS08 GHS09

Signal word (GHS-ZA) : Danger

Hazardous ingredients : hexane; heptane; n-pentane

Hazard statements (GHS-ZA) : H224 - Extremely flammable liquid and vapour.
H313 - May be harmful in contact with skin
H315 - Causes skin irritation.
H336 - May cause drowsiness or dizziness.
H373 - May cause damage to organs through prolonged or repeated exposure.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (GHS-ZA) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground and bond container and receiving equipment.
P241 - Use explosion-proof equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P260 - Do not breathe vapours.
P261 - Avoid breathing vapours.
P264 - Wash hands, forearms and face thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.

P280 - Wear eye protection, protective clothing, protective gloves.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 - Call a doctor if you feel unwell.
P314 - Get medical advice if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P332+P313 - If skin irritation occurs: Get medical advice.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use carbon dioxide (CO2), extinguishing powder, foam to extinguish.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents and container to an approved waste disposal plant.

2.3. Other hazards

Adverse physicochemical, human health and environmental effects : Extremely flammable liquid and vapour,May cause damage to organs through prolonged or repeated exposure,May cause drowsiness or dizziness,Harmful in contact with skin,Causes skin irritation,Very toxic to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
hexane	(CAS-No.) 110-54-3	35.0 - 80.0	Flam. Liq. 2, H225 Acute Tox. Not classified (Oral) Acute Tox. 5 (Dermal), H313 Skin Irrit. 2, H315 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
heptane	(CAS-No.) 142-82-5	15.0 - 30.0	Flam. Liq. 2, H225 Acute Tox. Not classified (Oral) Acute Tox. 5 (Dermal), H313 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
n-pentane	(CAS-No.) 109-66-0	8.0 - 20.0	Flam. Liq. 2, H225 Acute Tox. 5 (Oral), H303 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Rinse skin with water/shower. Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse eyes with water as a precaution.

First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : May cause drowsiness or dizziness.

Symptoms/effects after skin contact : Irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Fire hazard : Extremely flammable liquid and vapour.

5.3. Advice for firefighters

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

No additional information available

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe vapours. Avoid contact with skin, eyes and clothing.

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

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Do not breathe vapours. Use only outdoors or in a well-ventilated area. Do not get in eyes, on skin, or on clothing.

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

Technical measures : Ground/bond container and receiving equipment.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

hexane (110-54-3)	
South Africa - Occupational Exposure Limits (Recommended Limits)	
Local name	n-Hexane
OEL TWA (mg/m³)	70 mg/m³
OEL TWA (ppm)	20 ppm
Regulatory reference	Government Notice. R: 1179
South Africa - Occupational Exposure Limits (Airborne Pollutants)	
Local name	n-Hexane
OEL TWA (mg/m³)	70 mg/m³
OEL TWA (ppm)	20 ppm
Regulatory reference	Government Notice No. R 904

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, such as personal protective equipment (PPE)

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

8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Liquid.
Colour	:	Colourless to amber.
Odour	:	characteristic.
Odour threshold	:	No data available
pH	:	No data available
pH solution	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	Not applicable
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	< 25 °C
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not applicable
Vapour pressure	:	No data available
Vapour pressure at 50 °C	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Relative density of saturated gas/air mixture	:	No data available
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available
Lower explosive limit (LEL)	:	No data available
Upper explosive limit (UEL)	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable liquid and vapour.

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

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

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 (oral) : Not classified

Acute toxicity (dermal) : May be harmful in contact with skin.

Acute toxicity (inhalation) : Not classified

ATE ZA (Dermal)	2500 mg/kg bodyweight

hexane (110-54-3)	
LD50 oral rat	16000 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral)
LD50 dermal rabbit	> 3350 mg/kg bodyweight (Equivalent or similar to OECD 402, 4 h, Rabbit, Male, Read-across, Dermal)
LC50 inhalation rat (ppm)	> 5000 ppm (Equivalent or similar to OECD 403, 24 h, Rat, Male, Experimental value, Inhalation (vapours))

heptane (142-82-5)	
LD50 oral rat	> 5000 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Read-across, Oral)
LD50 dermal rabbit	> 2000 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Read-across, Dermal)
LC50 inhalation rat (mg/l)	> 29.29 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))

n-pentane (109-66-0)	
LD50 oral rat	> 2000 mg/kg (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LC50 inhalation rat (mg/l)	> 20 mg/l air (4 h, Rat, Male / female, Experimental value, Inhalation (vapours))

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : May cause drowsiness or dizziness.

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short-term (acute) : Very toxic to aquatic life.

Hazardous to the aquatic environment, long-term (chronic) : Very toxic to aquatic life with long lasting effects.

hexane (110-54-3)	
BCF fish 1	501.187 (Other, Pimephales promelas, QSAR)
Log Pow	4 (Experimental value, Equivalent or similar to OECD 107, 20 °C)
Log Koc	3.34 (log Koc, QSAR)

heptane (142-82-5)	
BCF other aquatic organisms 1	552 (BCFBAF v3.00, Calculated value)
Log Pow	4.66 (Experimental value)
Log Koc	2.38 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

n-pentane (109-66-0)	
LC50 fish 1	4.26 mg/l (Equivalent or similar to OECD 203, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	2.7 mg/l (Other, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
ErC50 (algae)	10.7 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Scenedesmus sp., Static system, Fresh water, Experimental value, GLP)
BCF fish 1	171 (Pimephales promelas, QSAR)
Log Pow	3.45 (Experimental value, Other, 25 °C)
Log Koc	2.9 (log Koc, QSAR)

12.2. Persistence and degradability

Ethanol fuel treatment	
Persistence and degradability	No additional information available

hexane (110-54-3)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
ThOD	3.52 g O_2 /g substance

heptane (142-82-5)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.92 g O_2 /g substance
Chemical oxygen demand (COD)	0.06 g O_2 /g substance
ThOD	3.52 g O_2 /g substance
BOD (% of ThOD)	> 0.5 (5 day(s), Literature study)

n-pentane (109-66-0)	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

Ethanol fuel treatment	
Bioaccumulative potential	No additional information available

hexane (110-54-3)	
BCF fish 1	See section 12.1 on ecotoxicology
Log Pow	See section 12.1 on ecotoxicology
Log Koc	See section 12.1 on ecotoxicology
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

heptane (142-82-5)	
BCF other aquatic organisms 1	See section 12.1 on ecotoxicology
Log Pow	See section 12.1 on ecotoxicology
Log Koc	See section 12.1 on ecotoxicology
Bioaccumulative potential	Potential for bioaccumulation (4 ≥ Log Kow ≤ 5).

n-pentane (109-66-0)	
BCF fish 1	See section 12.1 on ecotoxicology
Log Pow	See section 12.1 on ecotoxicology
Log Koc	See section 12.1 on ecotoxicology
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

Ethanol fuel treatment	
Mobility in soil	No additional information available

hexane (110-54-3)	
Surface tension	0.018 N/m (25 °C, 1 g/l)
Log Pow	See section 12.1 on ecotoxicology
Log Koc	See section 12.1 on ecotoxicology
Ecology - soil	Low potential for mobility in soil.

heptane (142-82-5)	
Surface tension	19.66 mN/m (25 °C)
Log Pow	See section 12.1 on ecotoxicology
Log Koc	See section 12.1 on ecotoxicology
Ecology - soil	Low potential for adsorption in soil.

n-pentane (109-66-0)	
Surface tension	0.013 N/m (20 °C)
Log Pow	See section 12.1 on ecotoxicology

n-pentane (109-66-0)	
Log Koc	See section 12.1 on ecotoxicology
Ecology - soil	Low potential for adsorption in soil.

12.5. Other adverse effects

Ozone : Not classified

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.

Additional information : Flammable vapours may accumulate in the container.

SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

SANS	IMDG	IATA
14.1. UN number		
3295	3295	3295
14.2. Proper Shipping Name		
HYDROCARBONS, LIQUID, N.O.S.	HYDROCARBONS, LIQUID, N.O.S.	Hydrocarbons, liquid, n.o.s.
14.3. Transport hazard class(es)		
3	3	3
		 Not applicable
14.4. Packing group		
III	III	III
14.5. Environmental hazards		
Dangerous for the environment : Yes	Dangerous for the environment : No :	Dangerous for the environment : No
No supplementary information available		

14.6. Special precautions for user

- SANS

Special provisions (SANS) : 223

Limited quantities (SANS) : 5 L

Limited quantities (SANS) : 5 L

Packagings, large packagings and IBCs Packing instructions (SANS) : P001, IBC03, LP01

Portable tank and bulk containers instructions (SANS) : T4

Portable tank and bulk container special provisions (SANS) : TP1, TP29

- IMDG

Special provisions (IMDG) : 223

Packing instructions (IMDG) : P001, LP01

IBC packing instructions (IMDG) : IBC03

Tank instructions (IMDG) : T4

Tank special provisions (IMDG) : TP1, TP29

EmS-No. (Fire) : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS

EmS-No. (Spillage) : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS

Stowage category (IMDG) : A

Properties and observations (IMDG) : Immiscible with water.

- IATA

PCA Excepted quantities (IATA) : E1

PCA Limited quantities (IATA) : Y344

PCA limited quantity max net quantity (IATA) : 10L

PCA packing instructions (IATA)	:	355
PCA max net quantity (IATA)	:	60L
CAO packing instructions (IATA)	:	366
CAO max net quantity (IATA)	:	220L
Special provisions (IATA)	:	A3, A224
ERG code (IATA)	:	3L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health, and environmental national regulations specific for the product

No additional information available

SECTION 16: Other information

Issue date	:	03/03/2020
Revision date	:	03/03/2022

Full text of H-statements:

H220	Extremely flammable gas.
H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H227	Combustible liquid
H303	May be harmful if swallowed
H304	May be fatal if swallowed and enters airways.
H313	May be harmful in contact with skin
H315	Causes skin irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

SDS South Africa

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.