

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **8+ Cetane Improver**

Product Code(s)

: US Product Codes: 00188, 90188, 00122P, 00123
Canadian Product Codes: 00422, 90422

Recommended use of the chemical and restrictions on use

: Diesel fuel additive No restrictions on use known.

Chemical family

: Mixture.

Name, address, and telephone number of the manufacturer:

FPPF Chemical Company, Inc.

117 West Tupper Street
Buffalo, NY, USA
14201

Manufacturer's Telephone # : 1-800-735-3773

24 Hr. Emergency Tel # : Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

Name, address, and telephone number of the supplier:

Refer to manufacturer

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Colorless to amber liquid. Solvent odor.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Classification

Flammable Liquid - Category 4

Aspiration Toxicity - Category 1

Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects

Specific Target organ toxicity, repeated exposure- Category 1

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

Combustible liquid and vapor.
May be fatal if swallowed and enters airways.
May cause drowsiness and dizziness.
Causes damage to organs through prolonged or repeated exposure.

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Precautionary statement(s)

Keep away from flames and hot surfaces. - No smoking.
 Use only outdoors or in a well-ventilated area.
 Do not breathe mist or vapor.
 Do not eat, drink or smoke when using this product.
 Wash thoroughly after handling.
 Wear protective gloves and eye/face protection.

Get medical advice/attention if you feel unwell.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.
 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam to extinguish.

Store in well-ventilated place. Keep cool. Keep container closed. Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification: May cause mild skin irritation. May cause mild eye irritation. Ingestion can cause gastrointestinal irritation, nausea, and diarrhea. Burning produces obnoxious and toxic fumes. Take measures to prevent the build up of electrostatic charge.

Environmental precautions: Avoid release to the environment. See ECOLOGICAL INFORMATION, Section 12.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| <u>Chemical name</u> | <u>Common name and synonyms</u> | <u>CAS #</u> | <u>Concentration (% by weight)</u> |
|---|---|--------------|------------------------------------|
| Stoddard solvent (mineral spirits) | Mineral spirits White spirit | 8052-41-3 | 45.0 - 70.0 |
| 2-Ethylhexyl nitrate | Ethylhexyl nitrate Nitric acid, 2-ethylhexyl ester | 27247-96-7 | 45.0 - 70.0 |
| 2-Ethylhexanol | Ethylhexanol 2-ethylhexanol | 104-76-7 | 0.5 - 1.5 |

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. Aspiration hazard if swallowed - can enter lungs and cause damage. Aspiration may cause pulmonary oedema and pneumonitis. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs.
- Inhalation* : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing is difficult, trained personnel should give oxygen. If breathing stops, provide artificial respiration.
- Skin contact* : IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Wash clothing before reuse.
- Eye contact* : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Flush eyes with water for at least 15 minutes. If eye irritation persists: get medical advice/attention.

Most important symptoms and effects, both acute and delayed

- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be fatal if swallowed and enters airways. Aspiration hazard - material may cause lung inflammation or damage if it enters lungs through vomiting or swallowing. Symptoms include coughing, shortness of breath and wheezing. May cause drowsiness and dizziness. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Direct skin contact may cause slight or mild, transient irritation. Direct eye contact may cause slight or mild, transient irritation.

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Indication of any immediate medical attention and special treatment needed

- : Immediate medical attention is required. Aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal. Provide general supportive measures and treat symptomatically. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Dry chemical, foam, carbon dioxide and water fog.

Unsuitable extinguishing media

- : Do not use water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Combustible liquid and vapor. Keep away from flames and hot surfaces. Vapours are heavier than air and collect in confined and low-lying areas. Vapors may travel considerable distance to a source of ignition and flash back. Material will float on water and can be re-ignited at the water's surface. This product will accumulate static charge by flow, splashing or agitation. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Flammable Liquid - Category 4

Hazardous combustion products

- : Carbon oxides ; Nitrogen oxides ; Aldehydes ; Other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Use water spray to keep containers cool. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply or any natural waterway. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Evacuate personnel to safe areas. Keep all other personnel upwind and away from the spill/release. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Restrict access to area until completion of clean-up. For personal protection see section 8.

Environmental precautions

- : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. For spilled liquids: absorb spill with inert, non-combustible material such as sand, then place into suitable containers. Use only non-sparking tools. Do not use combustible absorbents, such as sawdust. Bond and ground transfer containers and equipment to avoid static accumulation. Pick up and transfer to properly labeled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities.

Special spill response procedures

- : In case of a transportation accident, in the United States contact CHEMTREC at 1-800-424-9300 or International at 1-703-527-3887. If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): None.

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SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Keep away from flames and hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye/face protection. Do not breathe mist or vapor. Do not ingest. Avoid contact with skin, eyes and clothing. Wash hands before eating, drinking or smoking. Avoid contact with incompatible materials.

Conditions for safe storage : Store in well-ventilated place. Keep cool. Keep tightly closed. Store locked up. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials : Oxidizing agents, Acids, Reducing agents, Alkalies

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| Exposure Limits: | | | | |
|------------------------------------|------------------|-------------|-----------------------------------|-------------|
| Chemical Name | ACGIH TLV | | OSHA PEL | |
| | TWA | STEL | PEL | STEL |
| Stoddard solvent (mineral spirits) | 100 ppm | N/Av | 500 ppm (2900 mg/m ³) | N/Av |
| 2-Ethylhexyl nitrate | N/Av | N/Av | N/Av | N/Av |
| 2-Ethylhexanol | N/Av | N/Av | N/Av | N/Av |

Exposure controls

Ventilation and engineering measures

: Use only outdoors or in a well-ventilated area. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Use non-sparking equipment. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable approved respiratory protection. If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection : Wear protective gloves. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection : Wear eye/face protection. Chemical splash goggles are recommended. A full face shield may also be necessary.

Other protective equipment : Eye wash facilities and emergency shower must be available when handling this product. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Avoid breathing mist or vapours. Avoid contact with eyes, skin and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Colorless to amber liquid.

Odour : Solvent odor.

Odour threshold : N/Av

pH : N/Av

Melting/Freezing point : N/Av

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Initial boiling point and boiling range

: >149°C / >300°F

Flash point : 67.9°C / 156°F

Flashpoint (Method) : Tag closed cup

Evaporation rate (BuAe = 1) : Slower than n-butyl acetate

Flammability (solid, gas) : N/Av

Lower flammable limit (% by vol.)

: N/Av

Upper flammable limit (% by vol.)

: N/Av

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapour pressure : <3 mm Hg

Vapour density : >1

Relative density / Specific gravity

: 0.89

Solubility in water : Insoluble.

Other solubility(ies) : N/Av

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: N/Av

Auto-ignition temperature : N/Av

Decomposition temperature : N/Av

Viscosity : N/Av

Volatiles (% by weight) : 50%

Volatile organic Compounds (VOC's)

: N/Av

Absolute pressure of container

: N/Av

Flame projection length : N/Av

Other physical/chemical comments

: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions

: Hazardous polymerization does not occur. May be sensitive to static discharge.

Conditions to avoid : Keep away from flames and hot surfaces. Keep away from direct sunlight. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.

Incompatible materials : Oxidizing agents ;Acids ;Reducing agents ;Alkalies

Hazardous decomposition products

: None reported. Refer also to hazardous combustion products, Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

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Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : May cause drowsiness or dizziness. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Symptoms may include coughing, choking and wheezing.

Sign and symptoms ingestion

- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be fatal if swallowed and enters airways. Aspiration hazard - material may cause lung inflammation or damage if it enters lungs through vomiting or swallowing. Symptoms include coughing, shortness of breath and wheezing.

Sign and symptoms skin

- : Direct skin contact may cause slight or mild, transient irritation.

Sign and symptoms eyes

- : Direct eye contact may cause slight or mild, transient irritation.

Potential Chronic Health Effects

- : Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights. Prolonged or repeated contact may cause drying, cracking and defatting of the skin.

Mutagenicity

- : Not expected to be mutagenic in humans.

Carcinogenicity

- : Not classifiable as a human carcinogen. No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

- : This product is not expected to cause reproductive or developmental effects.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

- : Eyes, skin, respiratory system, digestive system, central nervous system.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Classification :

Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects
May cause drowsiness and dizziness.

Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye, respiratory and central nervous system disorders.

Synergistic materials

- : Not available.

Toxicological data

- : The calculated ATE values for this mixture are:

ATE oral = 205200 mg/kg

ATE dermal = Not applicable.

ATE inhalation (vapours) = 35.7 mg/L/4H

ATE inhalation (mists) = 150 mg/L/4H

See below for individual ingredient acute toxicity data.

| <u>Chemical name</u> | <u>LC₅₀(4hr)</u> <u>inh, rat</u> | <u>LD₅₀</u> | |
|------------------------------------|--|------------------------|---------------------------|
| | | <u>(Oral, rat)</u> | <u>(Rabbit, dermal)</u> |
| Stoddard solvent (mineral spirits) | > 5.5 mg/L (vapour) | > 5000 mg/kg | > 3000 mg/kg |
| 2-Ethylhexyl nitrate | > 14mg/L | >10mL/kg (>9600)mg/kg | > 5mL/kg (<4800)mg/kg |
| 2-Ethylhexanol | ≥1.2 - <5.3mg/L (aerosol) | 2052mg/kg | No information available. |

Other important toxicological hazards

- : None known or reported by the manufacturer.

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : No data is available on the product itself.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

| <u>Ingredients</u> | CAS No | Toxicity to Fish | | |
|------------------------------------|------------|-----------------------------------|---------------|----------|
| | | LC50 / 96h | NOEC / 21 day | M Factor |
| Stoddard solvent (mineral spirits) | 8052-41-3 | 2.1 - 4.2 mg/L (Bluegill sunfish) | N/Av | None. |
| 2-Ethylhexyl nitrate | 27247-96-7 | 2 mg/L (Bluegill sunfish) | N/Av | None. |
| 2-Ethylhexanol | 104-76-7 | 17.1 mg/L (Golden orfe) | N/Av | None. |

| <u>Ingredients</u> | CAS No | Toxicity to Daphnia | | |
|------------------------------------|------------|---|-----------------|----------|
| | | EC50 / 48h | NOEC / 21 day | M Factor |
| Stoddard solvent (mineral spirits) | 8052-41-3 | 0.42 - 2.3 mg/L (Daphnia magna) (Closed systems - low end; Open systems - high end) | 0.1 - 0.37 mg/L | None. |
| 2-Ethylhexyl nitrate | 27247-96-7 | > 12.6 mg/L [Daphnia magna (Water flea)] | N/Av | None. |
| 2-Ethylhexanol | 104-76-7 | 39 mg/L (Daphnia magna) | N/Av | None. |

| <u>Ingredients</u> | CAS No | Toxicity to Algae | | |
|------------------------------------|------------|--|-------------------|----------|
| | | EC50 / 96h or 72h | NOEC / 96h or 72h | M Factor |
| Stoddard solvent (mineral spirits) | 8052-41-3 | 0.58 - 1.2 mg/L/72hr (Green algae) (Closed systems - low end; Open systems - high end) | 0.16 mg/L/72hr | None. |
| 2-Ethylhexyl nitrate | 27247-96-7 | 1.57 mg/L/72hr (Green algae) | 12.6mg/L/72hr | None. |
| 2-Ethylhexanol | 104-76-7 | 16.6 mg/L/72hr (Green algae) | N/Av | None. |

Persistence and degradability

: No data is available on the product itself. 2-Ethylhexanol is considered to be readily biodegradable.

Bioaccumulation potential

: No data is available on the product itself.

See the following data for ingredient information.

| <u>Components</u> | <u>Partition coefficient n-octanol/water (log Kow)</u> | <u>Bioconcentration factor (BCF)</u> |
|--|--|--------------------------------------|
| Stoddard solvent (mineral spirits) (CAS 8052-41-3) | 3.16 - 7.06 | No information available. |
| 2-Ethylhexyl nitrate (CAS 27247-96-7) | 5.24 | No information available. |
| 2-Ethylhexanol (CAS 104-76-7) | 2.9 | 30 |

Mobility in soil : No data is available on the product itself.

Other Adverse Environmental effects



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- : The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

SECTION 13. DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8.
- Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations.
- RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORT INFORMATION

| Regulatory Information | UN Number | UN proper shipping name | Transport hazard class(es) | Packing Group | Label |
|---|---|---|----------------------------|---------------|---|
| TDG | None | Not regulated. | not regulated | none |  |
| TDG Additional information | This product meets the criteria for an environmentally hazardous material according to the IMDG Code. | | | | |
| 49CFR/DOT | NA1993 | Combustible liquid, n.o.s. (stoddard solvent; 2-Ethylhexyl nitrate) | Combustible. | III |  |
| 49CFR/DOT Additional information | Not regulated for road or rail shipment if packaged in non-bulk containers (450 Litres or less each). The 'label' appearing here is the placard to be used for bulk shipments. This product meets the criteria for an environmentally hazardous material according to the IMDG Code. | | | | |

- Special precautions for user** : Appropriate advice on safety must accompany the package. Keep away from flames and hot surfaces. - No smoking.
- Environmental hazards** : This product meets the criteria for an environmentally hazardous material according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
: Not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

| <u>Ingredients</u> | CAS # | TSCA Inventory | CERCLA Reportable Quantity(RQ) (40 CFR 117.302): | SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355: | SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical | |
|------------------------------------|------------|----------------|--|--|---|--------------------------|
| | | | | | Toxic Chemical | de minimus Concentration |
| Stoddard solvent (mineral spirits) | 8052-41-3 | Yes | None. | None. | No | N/Ap |
| 2-Ethylhexyl nitrate | 27247-96-7 | Yes | N/Ap | N/Av | No | N/Ap |
| 2-Ethylhexanol | 104-76-7 | Yes | N/Ap | N/Av | No | N/Ap |

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SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Physical hazards (Flammable)Health hazards(Aspiration hazard ;Specific target organ toxicity, single exposure ;Specific target organ toxicity, repeated exposure).Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

| <u>Ingredients</u> | CAS # | California Proposition 65 | | State "Right to Know" Lists | | | | | |
|------------------------------------|------------|---------------------------|------------------|-----------------------------|-----|-----|-----|-----|-----|
| | | Listed | Type of Toxicity | CA | MA | MN | NJ | PA | RI |
| Stoddard solvent (mineral spirits) | 8052-41-3 | No | Not listed | Yes | Yes | Yes | Yes | Yes | Yes |
| 2-Ethylhexyl nitrate | 27247-96-7 | No | Not listed | No | No | No | No | No | No |
| 2-Ethylhexanol | 104-76-7 | No | Not listed | No | Yes | No | No | Yes | No |

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

| <u>Ingredients</u> | CAS # | European EINECS | Australia AICS | Philippines PICCS | Japan ENCS | Korea KECI/KECL | China IECSC | NewZealand IOC |
|------------------------------------|------------|-----------------|----------------|-------------------|--------------------|-----------------|-------------|---|
| Stoddard solvent (mineral spirits) | 8052-41-3 | 232-489-3 | Present | Present | (9)-1702; (9)-1702 | KE-32199 | Present | HSR001498 |
| 2-Ethylhexyl nitrate | 27247-96-7 | 248-363-6 | Present | Present | (2)-3598 | KE-13803 | Present | May be used as a single component chemical under an appropriate group standard. |
| 2-Ethylhexanol | 104-76-7 | 203-234-3 | Present | Present | (2)-217 | KE-13766 | Present | HSR001386 |

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
 ATE: Acute Toxicity Estimate
 CA: California
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 CNS: Central Nervous System
 CSA: Canadian Standards Association
 DOT: Department of Transportation
 EC50: Effective Concentration 50%
 EINECS: European Inventory of Existing Commercial chemical Substances
 ENCS: Existing and New Chemical Substances
 EPA: Environmental Protection Agency
 HMIS: Hazardous Materials Identification System
 HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer

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IMDG: International Maritime Dangerous Goods
 Inh: Inhalation
 KECI: Korean Existing Chemicals Inventory
 KECL: Korean Existing Chemicals List
 LC: Lethal Concentration
 LD: Lethal Dose
 MA: Massachusetts
 MN: Minnesota
 MSHA: Mine Safety and Health Administration
 N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NIOSH: National Institute of Occupational Safety and Health
 NJ: New Jersey
 NOEC: No observable effect concentration
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TPQ: Threshold Planning Quantity
 TSCA: Toxic Substance Control Act
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2018.
 2. International Agency for Research on Cancer Monographs, searched 2018.
 3. Canadian Centre for Occupational Health and Safety, CCHInfoWeb databases, 2018 (Chempendium, HSDB and RTECs).
 4. Material Safety Data Sheets from manufacturer.
 5. US EPA Title III List of Lists - March 2015 version.
 6. California Proposition 65 List - November 23, 2018 version.
 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2018.

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Revision No.

: 2

Revision Information

: (M)SDS sections updated :
 2. HAZARDS IDENTIFICATION 4. FIRST AID MEASURES 11. TOXICOLOGICAL INFORMATION 14. TRANSPORT INFORMATION 15. REGULATORY INFORMATION 16. Other information

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

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| <p><u>Prepared for:</u> FPPF Chemical Company, Inc. 117 West Tupper Street Buffalo, NY, USA 14201 Telephone: 1-800-735-3773 Please direct all enquiries to FPPF Chemical Company</p> | |
| <p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p> |  |

DISCLAIMER

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