1. Identification
Product identifier: Green Diesel R100 Renewable Diesel
Other means of identification:
- SDS number: R100-V-GHS
- Synonyms: Green Diesel, Renewable Diesel, R99, R100
See section 16 for complete information.
Recommended use: This product is intended for use as a refinery feedstock, fuel or for use in engineered processes. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.
Recommended restrictions: None known.
Manufacturer/Importer/Supplier/Distributor information:
Manufacturer/Supplier: Valero Marketing & Supply Company and Affiliates
One Valero Way
San Antonio, TX 78269-6000
General Assistance: 210-345-4593
E-Mail: CorpHSE@valero.com
Contact Person: Industrial Hygienist
Emergency Telephone:
- 24 Hour Emergency: 866-565-5220
- 1-800-424-9300 (CHEMTREC USA)

2. Hazard(s) identification
Physical hazards: Flammable liquids - Category 3
Health hazards:
- Acute toxicity, inhalation - Category 4
- Skin corrosion/irritation - Category 2
- Carcinogenicity - Category 2
- Specific target organ toxicity, repeated exposure - Category 2 (blood, thymus, liver)
- Aspiration hazard - Category 1
Environmental hazards: Hazardous to the aquatic environment, long-term hazard - Category 2
OSHA defined hazards: Not classified.
Label elements:
Signal word: Danger
Hazard statement:
Flammable liquid and vapor. Harmful if inhaled. Causes skin irritation. Suspected of causing cancer. May cause damage to organs (blood, thymus, liver) through prolonged or repeated exposure. May be fatal if swallowed and enters airways.
Precautionary statement:
Prevention:
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Do not breathe mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area.
Response
If skin irritation occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If exposed or concerned: Get medical advice/attention. If swallowed: Immediately call a poison center/doctor. Take off contaminated clothing and wash before reuse. In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction. Do NOT induce vomiting.

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

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

Hazard(s) not otherwise classified (HNOC)
None known.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel, C9-18-alkane branched and linear</td>
<td>1159170-26-9</td>
<td>100</td>
</tr>
</tbody>
</table>

4. First-aid measures

Inhalation
If symptomatic, move to fresh air. If breathing is difficult, give oxygen. Get medical attention if symptoms persist.

Skin contact
Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact
Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Remove contact lenses, if present and easy to do. Get medical attention. In case of irritation from airborne exposure, move to fresh air. Get medical attention if symptoms persist.

Ingestion
Call a physician or poison control center immediately. DO NOT induce vomiting. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than the hips to help prevent aspiration.

Most important symptoms/effects, acute and delayed
Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Liver enlargement. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Indication of immediate medical attention and special treatment needed
In case of shortness of breath, give oxygen. Symptoms may be delayed. Keep victim under observation. Treat symptomatically. The toxicological properties of this material have not been fully investigated.

General information
If exposed or concerned: get medical attention/advice. 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. Wash contaminated clothing before re-use.

5. Fire-fighting measures

Suitable extinguishing media

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
Vapor may cause flash fire. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge. The product can accumulate electrostatic charges, which may cause an electrical spark (ignition source).

Special protective equipment and precautions for firefighters
Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire-fighting equipment/instructions
Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Vapors may form explosive air mixtures even at room temperature. Prevent build-up of vapors or gases to explosive concentrations. Do not move cargo or vehicle if cargo has been exposed to heat. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.

Specific methods
Use water spray to cool unopened containers. Prevent build-up of vapors or gasses to explosive concentrations.
6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.

**Methods and materials for containment and cleaning up**

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Extinguish all flames in the vicinity. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

Small Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Cover with plastic sheet to prevent spreading. Collect spillage. Following product recovery, flush area with water. Prevent product from entering drains. Do not allow material to contaminate ground water system. Clean surface thoroughly to remove residual contamination. Wipe up with absorbent material (e.g. cloth, fleece).

Never return spills in original containers for re-use.

**Environmental precautions**

If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Flammable. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802. For highway or railways spills, contact Chemtrec at 1-800-424-9300.

7. Handling and storage

**Precautions for safe handling**

Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Wear personal protective equipment. Do not breathe gas/fumes/vapor/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. The product is extremely flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke. Avoid release to the environment.

**Conditions for safe storage, including any incompatibilities**

Flammable liquid storage. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. Exposure controls/personal protection

**Occupational exposure limits**

No exposure limits noted for ingredient(s).

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

**Skin protection**

**Hand protection**

Avoid exposure - obtain special instructions before use. Wear protective gloves. Protective gloves. Wear chemical-resistant, impervious gloves. Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.
Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Colorless liquid.

Physical state

Liquid.

Form

Liquid.

Color

Colorless.

Odor

Odorless to mild paraffin.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

354.2 - 588.2 °F (179 - 309 °C)

Flash point

132.8 - 136.4 °F (56.0 - 58.0 °C)

Evaporation rate

Not available.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flamability limit - lower (%)

Not available.

Flamability limit - upper (%)

Not available.

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)

Not available.

Vapor pressure

Not available.

Vapor density

> 1

Relative density

Not available.

Solubility(ies)

Solubility (water)

Insoluble

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

494.6 °F (257 °C)

Decomposition temperature

Not available.

Viscosity

1.9 - 4.1 cP (40°C)

Other information

Density

0.77 g/ml (15°C)

10. Stability and reactivity

Reactivity

Not available.

Chemical stability

Stable under normal temperature conditions and recommended use.

Possibility of hazardous reactions

Hazardous polymerization does not occur.

Conditions to avoid

Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials

Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion
May cause lung damage if swallowed.

Inhalation
Harmful if inhaled.

Skin contact
Causes skin irritation.

Eye contact
Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics
Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Liver enlargement. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. May cause damage to organs through prolonged or repeated exposure.

Information on toxicological effects

Acute toxicity
Harmful if inhaled. Harmful: may cause lung damage if swallowed.

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/eye irritation
Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Respiratory sensitization
Not a respiratory sensitizer.

Skin sensitization
Not a skin sensitizer.

Germ cell mutagenicity
Based on available data, the classification criteria are not met.

Carcinogenicity
International Agency for Research on Cancer (IARC): Whole diesel engine exhaust – IARC Group 1. Exposure may cause lung cancer and also noted a positive association with an increased risk of bladder cancer.

Reproductive toxicity
Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure
Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure
May cause damage to organs (blood, thymus, liver) through prolonged or repeated exposure.

Aspiration hazard
May be fatal if swallowed and enters airways.

Further information
Symptoms may be delayed.

12. Ecological information

Ecotoxicity
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Persistence and degradability
Not available.

Bioaccumulative potential
Not available.

Mobility in soil
Not available.

Other adverse effects
Not available.

13. Disposal considerations

Disposal instructions
Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Hazardous waste code
D001: Waste Flammable material with a flash point <140 °F

Waste from residues / unused products
Dispose of in accordance with local regulations.

Contaminated packaging
Offer rinsed packaging material to local recycling facilities.

14. Transport information

DOT

UN number
UN1202

UN proper shipping name
Diesel fuel
Transport hazard class(es)

Class: Combustible Liquid
Subsidiary risk: -
Packing group: III
Environmental hazards: Yes
Marine pollutant: Yes

Special precautions for user: Not available.
Special provisions: 144, B1, IB3, T2, TP1
Packaging exceptions: 150
Packaging non bulk: 203
Packaging bulk: 242

IATA
UN number: UN1202
UN proper shipping name: Gas oil

IMDG
UN number: UN1202
UN proper shipping name: DIESEL FUEL

15. Regulatory information

US federal regulations
This product is hazardous according to OSHA 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)
Not regulated.
Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations

US. Massachusetts RTK - Substance List
Not regulated.

US. New Jersey Worker and Community Right-to-Know Act
Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law
Not listed.

US. Rhode Island RTK
Not regulated.

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not listed.

International Inventories

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<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
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<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
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<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
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<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
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<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
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<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
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<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
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<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
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<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
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<td>New Zealand</td>
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<td>Philippines</td>
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<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
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*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 28-May-2014
Revision date -
Version # 01
Further information HMIS® is a registered trade and service mark of the NPCA.

NFPA Ratings

[Diagram of NFPA ratings: 2 2 0]
References
EPA: AQUIRE database
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer
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