

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Reviewed on 04/07/2015

1 Identification

- **Product identifier**
- **Trade name: R600a**
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
EcoGreen Industries, LLC
PO Box 1308
Anderston, CA 96007
Phone: (530) 378-4443
Fax: (888) 612-3207
- **Emergency telephone number:** Chemtrec 800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Gas 1 H220 Extremely flammable gas.

- **Label elements**
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**
Extremely flammable gas.
- **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
Store in a well-ventilated place.
- **Unknown acute toxicity:**
99.9 percent of the mixture consists of ingredient(s) of unknown toxicity.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 4
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	4	Fire = 4
REACTIVITY	0	Reactivity = 0

· **Other hazards** None known

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous Components:**

CAS: 75-28-5	Isobutane	 Flam. Gas 1, H220; Press. Gas, H280	100%
RTECS: TZ 4300000			

4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If swallowed and symptoms occur, consult a doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:** CO₂, sand, extinguishing powder. Do not use water.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· **Special hazards arising from the substance or mixture** No further relevant information available.

· **Advice for firefighters**

· **Protective equipment:**

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

6 Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:** No special measures required.

· **Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Dispose of the collected material according to regulations.

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Do not gas tight seal receptacle.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**

· **Components with occupational exposure limits:**

75-28-5 Isobutane

TLV Short-term value: 2370 mg/m³, 1000 ppm

- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Select glove material based on penetration times, rates of diffusion and degradation.
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.
- **Eye protection:**



Tightly sealed goggles

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:

Gaseous

Color:

Colorless

· **Odor:**

Petroleum-like

· **Odor threshold:**

Not determined.

· **pH-value:**

Not determined.

· **Change in condition**

Melting point/Melting range:

-159.4 °C (-255 °F)

Boiling point/Boiling range:

-11 °C (12 °F)

· **Flash point:**

-83 °C (-117 °F)

· **Flammability (solid, gaseous):**

Not determined.

· **Ignition temperature:**

460 °C (860 °F)

· **Decomposition temperature:**

Not determined.

· **Auto igniting:**

Product is not self-igniting.

· **Danger of explosion:**

Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

Lower:

1.8 Vol %

Upper:

8.5 Vol %

· **Vapor pressure @ 20 °C (68 °F):**

3000 hPa (2250 mm Hg)

· **Density @ 20 °C (68 °F):**

0.548 g/cm³ (4.573 lbs/gal)

· **Relative density**

Not determined.

· **Vapor density**

Not determined.

· **Evaporation rate**

Not applicable.

· **Solubility in / Miscibility with**

Water @ 20 °C (68 °F):

0.049 g/l

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

Dynamic:

Not determined.

Kinematic:

Not determined.

· **Solvent content:**

Organic solvents:

0.0 %

VOC content:

99.9 %

· **Other information**

No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

· **Chemical stability** Stable under normal conditions.

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Possibility of hazardous reactions** No dangerous reactions known.

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- **Conditions to avoid** Heat, flame and ignition sources.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritating effect.
- **on the eye:** No irritating effect.
- **Additional toxicological information:**
- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to humans
Group 2A - Probably carcinogenic to humans
Group 2B - Possibly carcinogenic to humans
Group 3 - Not classifiable as to its carcinogenicity to humans
Group 4 - Probably not carcinogenic to humans

· NTP (National Toxicology Program)

None of the ingredients are listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN1969
- **UN proper shipping name**
- **DOT** Isobutane
- **ADR** UN1969 Isobutane
- **IMDG, IATA** ISOBUTANE

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· **Transport hazard class(es)**

· **DOT, IMDG, IATA**

· **Class** 2.1

· **ADR**

· **Class** 2.1 2F

· **Packing group** Not applicable.

· **Environmental hazards:** Not applicable.

· **Special precautions for user** Not applicable.

· **Danger code (Kemler):** 2.1

· **EMS Number:** F-D,S-U

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Excepted quantities (EQ)** Code: E0
Not permitted as Excepted Quantity

· **UN "Model Regulation":** UN1969, Isobutane, 2.1

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

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· **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02

· **Signal word** Danger

· **Hazard statements**

Extremely flammable gas.

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
Store in a well-ventilated place.

· **National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· **State Right to Know**

CAS: 75-28-5	Isobutane	 Flam. Gas 1, H220; Press. Gas, H280	100%
RTECS: TZ 4300000			

All ingredients are listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of preparation / last revision** 04/07/2015 / -

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
Flam. Gas 1: Flammable gases, Hazard Category 1
Press. Gas: Gases under pressure: Compressed gas

· *** Data compared to the previous version altered.**

SDS created by MSDS Authoring Services www.msdsauthoring.com (877) 204-9106