TEST RESULTS

4501, 4508
Jungle Formula
Insect Repellent

• Product Literature
• Personal Repellency Test - Mosquitoes - Length of Protection 8 Hours
• CDC Report - Insect Repellent Use and Safety
• Compatibility with Rubber Insulating Lineman’s Gloves
• ASTM D 120-95
• Product SDS

RAINBOW TECHNOLOGY CORPORATION
261 Cahaba Valley Parkway
Pelham, AL 35124-1146
FAX: 1-800-521-6896
www.rainbowtech.net
1-800-637-6047

Rev. August 2016
This powerful insect repellent provides long-lasting protection against gnats, mosquitoes, biting flies, chiggers, ticks, flying insects, and fleas. Applied to exposed skin and non-FR clothing, JUNGLE FORMULA INSECT REPELLENT keeps insects from biting.

JUNGLE FORMULA INSECT REPELLENT is even effective against the ticks that carry Lyme Disease, Rocky Mountain Spotty Fever, and West Nile Virus.

This long-lasting product is specially formulated to meet the needs of the utility and telecommunication industries. Prevents unsafe insect distractions, repels persistent biting and piercing insects.

JUNGLE FORMULA INSECT REPELLENT will not harm people, the environment, or utility and telecom equipment. Apply it to clothing or the surface of the skin to prevent insect bites. Read and follow directions on the label.

Use JUNGLE FORMULA INSECT REPELLENT TOWELETTE combined with Rainbow’s Tick & Mosquito Repellent for FR Clothing (4507) to provide the ultimate protective barrier against biting, disease carrying insects.

Use JUNGLE FORMULA INSECT REPELLENT as a multi-purpose repellent which protects crews from biting insects including:

- Biting flies
- Chiggers
- Fleas
- Flying insects
- Gnats
- Mosquitoes
- Ticks

### FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
</tr>
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<tbody>
<tr>
<td>Contains extra-strength DEET formula 25% aerosol spray and 30% towelette</td>
<td>Reduces risk of Lyme Disease, Rocky Mountain Spotted Fever, and West Nile Virus</td>
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<tr>
<td>Multi-purpose repellent provides maximum personal protection</td>
<td>Repels gnats, mosquitoes, biting flies, chiggers, ticks, flying insects, fleas</td>
</tr>
<tr>
<td>Handy 6 oz can or towelette</td>
<td>Convenient, easy to carry, quick and easy application</td>
</tr>
<tr>
<td>Safe on rubber goods</td>
<td>Safe for use according to label directions</td>
</tr>
</tbody>
</table>
Rainbow Technology offers a comprehensive line of products to the utility and telecommunications industries. Users of JUNGLE FORMULA INSECT REPELLENT often find these other Rainbow products helpful too.

- Tick & Mosquito Repellent for FR Clothing (4507)
- Utility Sunscreen (4022, 40225, 40223)
- Instant Hand Sanitizer (7152)
- KNUCKLES Tool Cleaning Towels (79315, 79316)
- Poison Oak & Ivy Block® (40203)
- Poison Oak & Ivy Cleanser (40201)(Cleanser Towelettes 40204)
- CortiCool® (40202)
- Wasp & Ant Spray (4335, 88500)
- Weed Killer (4035, 4035G, 40355, 40360, 4037, 4037S, 4037P)
- Fire Ant & Insect Killer (4480, 4483, 4484)
- Insect Tag (4049)
- Insect Probe (4357)
- Can Holster (70604)
- InsecTape® (4045)
- Quick-Kill Weed Killer (40425)

This product is only for sale to and use by service personnel. MSDS available on request.

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<tr>
<th>PRODUCT NUMBER</th>
<th>CONTAINER SIZE</th>
<th>UNITS/CASE</th>
<th>CASE WEIGHT</th>
<th>CASE SIZE</th>
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<tr>
<td>4501</td>
<td>6 oz Aerosol</td>
<td>12</td>
<td>8 lbs</td>
<td>7” x 7” x 9”</td>
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<tr>
<td>4508</td>
<td>50 Towelettes/box</td>
<td>4 boxes/case</td>
<td>7 lbs</td>
<td>13” x 9” x 9”</td>
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</tbody>
</table>

Do you have a question about any Rainbow Technology product? Because we’ve been supplying the utility and telecommunications industries since 1971, our technical support team has the expertise to provide answers and solutions. Just call us at **1.800.637.6047**.
METHOD

Personal Repellent Aerosol – Mosquitoes

A Pretest landing rate was taken to assure the viability of the colony.

Three individuals applied 1 gram of one candidate aerosol to one forearm and 1 gram of another aerosol to the other forearm. Three minute exposures were repeated at 30 minute intervals throughout a six-hour test, or until a confirmed bite was received. A confirmed bite is more than one bite in the same exposure, or one bite in each of two consecutive exposures.

Both forearms were simultaneously exposed to the same mosquito population. The cage measured 20”x 20” x 18” and was equipped with two 6” sleeve openings near the bottom of the cage. The cage contained more than 1,000 adult mosquitoes, A aegypti, of mixed sexes.

SUMMARIZED RESULTS

Total Protection Time – Minutes

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<th>KAM</th>
<th>KKA</th>
<th>SER</th>
<th>AVG</th>
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<tr>
<td>#4501 Jungle Formula</td>
<td>240</td>
<td>360</td>
<td>360</td>
<td>320</td>
</tr>
<tr>
<td>DEET Control</td>
<td>240</td>
<td>360</td>
<td>330</td>
<td>310</td>
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</table>
Questions and Answers
Updated 08/29/02

Insect Repellent Use and Safety Updated

**Insect Repellent Use**

Q. **Why should I use insect repellent?**
   A. Insect repellents help people reduce their exposure to mosquito bites that may carry potentially serious viruses such as West Nile virus, and allow them to continue to play and work outdoors.

Q. **When should I use mosquito repellent?**
   A. Apply repellent when you are going to be outdoors and will be at risk for getting bitten by mosquitoes.

Q. **What time of day should I wear mosquito repellent?**
   A. Many of the mosquitoes that carry the West Nile virus are especially likely to bite around dusk and dawn. If you are outdoors around these times of the day, it is important to apply repellent. In many parts of the country, there are mosquitoes that also bite during the day, and these mosquitoes have also been found to carry the West Nile virus. The safest decision is to apply repellent whenever you are outdoors.

Q. **How often should repellent be reapplied?**
   A. Follow the directions on the product you are using in order to determine how frequently you need to reapply repellent. Sweating, perspiration or getting wet may mean that you need to re-apply repellent more frequently. If you are not being bitten, it is not necessary to re-apply repellent. Repellents containing a higher concentration of active ingredient (such as DEET) provide longer-lasting protection.

Q. **Should I wear repellent while I am indoors?**
   A. Probably not. If mosquitoes are biting you while you are indoors, there are probably better ways to prevent these bites instead of wearing repellent all the time. Check window and door screens for holes that may be allowing mosquitoes inside. If your house or apartment does not have screens, a quick solution may be to staple or tack screening (available from a hardware store) across the windows. In some areas community programs can help older citizens or others who need assistance.

Q. **How does mosquito repellent work?**
   A. Female mosquitoes bite people and animals because they need the protein found in blood to help develop their eggs. Mosquitoes are attracted to people by skin odors and carbon dioxide from breath. Many repellents contain a chemical, N,N-diethyl-m-toluamide (DEET), which repels the mosquito, making the person unattractive for feeding. DEET does not kill mosquitoes; it just makes them unable to locate us. Repellents are effective only at short distances from the treated surface, so you may still see mosquitoes flying nearby. As long as you are not getting bitten, there is no reason to apply more DEET.

Q. **Which mosquito repellent works the best?**
   A. The most effective repellents contain DEET (N,N-diethyl-m-toluamide), which is an ingredient used to repel pests like mosquitoes and ticks. DEET has been tested against a variety of biting insects and has been shown to be very effective. The more DEET a repellent contains the longer time it can protect you from mosquito bites. A higher percentage of DEET in a repellent does not mean that your protection is better—just that it will last longer. DEET concentrations higher than 50% do not increase the length of
Q. How does the percentage of DEET in a product relate to the amount of protection it gives?
A. Based on a recent study:

- A product containing 23.8% DEET provided an average of 5 hours of protection from mosquito bites.
- A product containing 20% DEET provided almost 4 hours of protection.
- A product with 6.65% DEET provided almost 2 hours of protection.
- Products with 4.75% DEET and 2% soybean oil were both able to provide roughly 1 and a half hour of protection.

Choose a repellent that provides protection for the amount of time that you will be outdoors. A higher percentage of DEET should be used if you will be outdoors for several hours while a lower percentage of DEET can be used if time outdoors will be limited. You can also re-apply a product if you are outdoors for a longer time than expected and start to be bitten by mosquitoes. (For more information, see Table 1: Fradin and Day, 2002.)

Q. Why does CDC recommend using DEET?
A. DEET is the most effective and best-studied insect repellent available. (Fradin, 1998). Studies using humans and mosquitoes report that only products containing DEET offer long-lasting protection after a single application. (Fradin and Day, 2002.)

Q. Are non-DEET repellents effective (e.g. Skin-So-Soft, plant-based repellents)?
A. Some non-DEET repellent products which are intended to be applied directly to skin also provide some protection from mosquito bites. However, studies have suggested that other products do not offer the same level of protection, or that protection does not last as long as products containing DEET. A soybean-oil-based product has been shown to provide protection for a period of time similar to a product with a low concentration of DEET (4.75%) (Fradin and Day, 2002.).

People should choose a repellent that they will be likely to use consistently and that will provide sufficient protection for the amount of time that they will be spending outdoors. Product labels often indicate the length of time that protection that can be expected from a product. Persons who are concerned about using DEET may wish to consult their health care provider for advice. The National Pesticide Information Center (NPIC) can also provide information through a toll-free number, 1-800-858-7378 or http://npic.orst.edu/.

Q. I'm confused. None of the products in the store says "DEET".
A. Most insect repellents that are available in stores are labeled with the chemical name for DEET. Look for N,N-diethyl-m-toluamide or, sometimes, N,N-diethly-3-methylbenamidine. Choose a repellent that offers appropriate protection for the amount of time you will be outdoors. A higher percentage of DEET should be used if you will be outdoors for several hours while a lower percentage of DEET can be used if time outdoors will be limited.

Using Repellents Safely

Q. Is DEET safe?
A. Yes, products containing DEET are very safe when used according to the directions. Because DEET is so widely used, a great deal of testing has been done. When manufacturers seek registration with the U.S. Environmental Protection Agency (EPA) for products such as DEET, laboratory testing regarding both short-term and long-term health effects must be carried out. Over the long history of DEET use, very few confirmed incidents of toxic reactions to DEET have occurred when the product is used properly. (From the National Pesticide Information Center [NPIC], EPA re-registration eligibility...
Q. What are some general considerations to remember in order to use products containing DEET safely?
A. Always follow the recommendations appearing on the product label.

- Use enough repellent to cover exposed skin or clothing. Don’t apply repellent to skin that is under clothing. Heavy application is not necessary to achieve protection.
- Do not apply repellent to cuts, wounds, or irritated skin.
- After returning indoors, wash treated skin with soap and water.
- Do not spray aerosol or pump products in enclosed areas.
- Do not apply aerosol or pump products directly to your face. Spray your hands and then rub them carefully over the face, avoiding eyes and mouth.

Q. How should products containing DEET be used on children?
A. No definitive studies exist in the scientific literature about what concentration of DEET is safe for children. The American Academy of Pediatrics has recommended that a cautious approach is to use products with a low concentration of DEET, 10% or less, on children aged 2 - 12. Most guidelines cite that it is acceptable to use repellents containing DEET on children over 2 years of age. Other experts suggest that it is acceptable to apply repellent with low concentrations of DEET to infants over 2 months old. It is recommended that for children under 2 years of age only one application per day of repellent containing DEET should be used.

Repellent products that do not contain DEET are not likely to offer the same degree of protection from mosquito bites as products containing DEET. Non-DEET repellents have not necessarily been as thoroughly studied as DEET, and may not be safer for use on children.

Parents should choose the type and concentration of repellent to be used by taking into account the amount of time that a child will be outdoors, exposure to mosquitoes, and the risk of mosquito-transmitted disease in the area. Persons who are concerned about using DEET or other products on children may wish to consult their health care provider for advice. The National Pesticide Information Center (NPIC) can also provide information through a toll-free number, 1-800-858-7378 or http://npic.orst.edu.

Always follow the recommendations appearing on the product label when using repellent.

- When using repellent on a child, apply it to your own hands and then rub them on your child. Avoid children's eyes and mouth and use it sparingly around their ears.
- Do not apply repellent to children's hands. (Children tend to put their hands in their mouths.)
- Do not allow young children to apply insect repellent to themselves; have an adult do it for them. Keep repellents out of reach of children.
- Do not apply repellent to skin under clothing. If repellent is applied to clothing, wash treated clothing before wearing again.

Using repellents on the skin is not the only way to avoid mosquito bites.

Q. Is DEET safe for pregnant or nursing women?
A. There are no reported adverse events following use of repellents containing DEET in pregnant or breastfeeding women.

Q. Are there any risks due to using repellents containing DEET?
A. Use of these products may cause skin reactions in rare cases. If you suspect a reaction to this product, discontinue use, wash the treated skin, and call your local poison control...
center. There is a new national number to reach a Poison Control Center near you: 1-800-
222-1222.

If you go to a doctor, take the product with you. Cases of serious reactions to products
containing DEET have been related to misuse of the product, such as swallowing, using
over broken skin, and using for multiple days without washing skin in between use, for
example. Always follow the instructions on the product label.

Q. Can I put DEET on my pets to protect them from mosquito bites?
A. It is recommended that you do not apply repellents with DEET to animals, because they
may lick themselves and therefore "eat" the product. You may want to check with your
veterinarian for suggestions if a pet is being bothered by mosquitoes.

Repellents and Schools

Q. Should parents spray insect repellent on their children before they go to school?
A. Whether children spend time outside during the school day should determine the need
for applying repellent. Because most schools in the United States have air conditioning,
children's exposure to mosquitoes during the school day is not likely to be high. If children
will be spending time outdoors (for example, in recreational activities, walking to and from
school), parents may wish to apply repellent. Mosquito repellent containing DEET is the
most effective in providing long-lasting protection from mosquito bites.

Q. Should children be given repellent to use during the day?
A. The age and maturity of the child should be taken into account before giving repellent to
children for their own use. As with many other chemicals, care should be taken that DEET
is not misused or swallowed. Parents should find out if a child will be outside during the
school day, and should discuss proper use of the product with their children. Parents
should also consult local officials to obtain policies and procedures specific to bringing
repellent to school.

More Information About Repellents

Q. Where can I get more information about repellents?
A. For more information about using repellents safely please consult the EPA Web site:
http://www.epa.gov/pesticides/citizens/insectrp.htm or consult the National Pesticide
Information Center (NPIC), which is cooperatively sponsored by Oregon State University
and the U.S. EPA. NPIC can be reached at: http://npic.orst.edu/ or 1-800-858-7378.
Test Report Summary
Jungle Formula Insect Repellent Compatibility with Rubber Insulating Lineman’s Gloves
Test Completion Date April 4, 2002

Scope – To determine the effects of Rainbow Jungle Formula Insect Repellent on Rubber Insulating Gloves per ASTM D 120-95, ASTM D 412-98a, ASTM D 624-00 and ASTM D 471-98.

Results - All samples tested met the requirements set forth in ASTM D 120-95.

Larry Joe Steeley, Jr.
Vice President of Operations
April 9, 2002

- TEST REPORT -

PN# 47760B
PO# 10698

Prepared for:

Mr. Larry Steeley, Jr.
Rainbow Technology Corp.
261 Cahaba Valley Parkway
Pelham, AL 35124

Approved by: Nancy Pasho

Approved by: Jim Drummond

AN A2LA ACCREDITED LABORATORY
MEMBER OF ACIL: THE ASSOCIATION OF INDEPENDENT SCIENTIFIC,
ENGINEERING AND TESTING FIRMS
ISO 9001 Registered
Mr. Larry Steeley, Jr.
Rainbow Tech. Corp.
261 Cahaba Valley Parkway
Pelham, AL 35124

SUBJECT: Physical testing on material submitted by the above company to ASTM D 120-95 specification PO# 10698

RECEIVED: Three (3) pairs of rubber insulating gloves for electrical workers identified as follows:
White Rubber Co.
1) Black Type 1 Class 1 Size 8
2) Black Type 1 Class 2 Size 10
3) Black Type 1 Class 3 Size 11½
Four (4) cans of repellent identified as Rainbow Jungle Formula Insect Repellent.

ORIGINAL PHYSICAL PROPERTIES, ASTM D 412-98a, D 624-00
Die C specimens tested at 20 in/min.
400% elongation on tension set.

REQUIREMENTS:
Tensile Strength, psi = 2500 min.
Elongation, % = 600 min.
200% Modulus, psi = 300 max.
Tension Set, % = 25 max.
Tear Strength, ppi = 120 min.

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<tr>
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<th>CLASS 3</th>
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<td>Tensile Strength, psi</td>
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<td>Ultimate Elongation, %</td>
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<td>200% Modulus, psi</td>
<td>183</td>
<td>166</td>
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<td>Tension Set, %</td>
<td>12.1</td>
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<tr>
<td>Tear Strength, ppi</td>
<td>144</td>
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</table>
FLUID RESISTANCE, ASTM D 471-98
Specimens aged 168 hrs. @ 23°C sprayed daily with Jungle Formula Insect Repellent

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<td>Ultimate Elongation, %</td>
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<td>Tension Set, %</td>
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<tr>
<td>Tear Strength, ppi</td>
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</table>

Nancy Pasho
Physical Testing, Assistant Manager
AKRON RUBBER DEVELOPMENT LABORATORY, INC.

PN# 47760B
NP/JD/sc
CRS Registrars, Inc. certifies the Corporate Quality Management System of

Akron Rubber Development Laboratory, Inc.

Facilities included are identified in the accompanying schedule has been assessed and conforms to:

ISO 9001-1994
ANSI/ASQC Q9001-1994

Applicable to

Material design, development and evaluation, compositional analysis and formulation reconstruction, failure analysis and forensic services, quality assurance and commercial testing of plastic and rubber materials.

Certification Date: 12/28/2000 Certificate Number: 15159
Term of Validity: Continuous
American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 25-1990

AKRON RUBBER DEVELOPMENT LABORATORY
2887 Gilchrist Road
Akron, OH 44305
Fred Farina  Phone: 330 794 6600

MECHANICAL

Valid To: April 30, 2002

Certificate Number: 0255-01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests:

Rubber and Related Products:
ASTM: B117, D257, D380 (except 16.2, 17, 18), D395, D412, D413, D429, D471, D518, D572, D573, D575, D623, D624, D746, D813, D865, D925, D991, D1053, D1056, D1149, D1171, D1229, D1329, D1415, D1646, D1650, D2084, D2137, D2228, D2240, D2632-88, D3137, D3182, D3389, D3395, D4329, F146, F152
ISO: 34, 37, 812, 815, 1431, 1653, 3384, 6056, 6383
JIS: K6301, Z2371
DIN: S5316

Plastics and Related Products:
ASTM: D256, D543, D570, D635, D638, D648, D695, D785, D790, D792, D794, D882, D1004, D1203, D1238, D1525, D1693, D1708, D1894, D2583, D2584, D3045, D3364, D3576, D3641, D3763, D3801, D4812, D5420
ISO: 62, 75-1&2, 178, 179, 180, 188, 293, 306, 527-1, 899, 1133, 1210, 2818 (Sec. 3.2, 6.2, 6.4), 3795
GM: 9904P

Latex:
ASTM: D1055, D3492, D3577, D3578, D5151, D6124, BS 3704
ARDL: 2140

Adhesives, Sealers and Adhesive Tapes:
AFG-01 Test Specification (authored by APA-American Plywood Association)

Dynamic & Predictive Testing (MTS):
ASTM: D4065, D5992, F355 (Procedure C), F1292
UL: 746B
SAE: J1085a
ARDL: 8105, 8106, 8110, 8111
ISO: 2856, 4664

Flammability:
UL 94
FMVSS-302
ISO: 1210

Condoms:
ISO: 4074-1
ARDL: 2139
WHO Specification & Guidelines for Condom Procurement

(A2LA Cert. No. 0255-01) 01/29/02

5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8373 • Phone: 301-644 3248 • Fax: 301-662 2974
# 1 Identification

- **Product identifier**
- **Trade name:** Jungle Formula Insect Repellent  
  **EPA Reg. No.** 51147-13-13283
- **Article number:** 4501
- **Recommended use and restriction on use**
  - **Recommended use:** Insect repellent
  - **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
  - **Manufacturer/Supplier:** Rainbow Technology Corp  
    261 Cahaba Valley Pkwy  
    Pelham, AL 35124  
    Toll Free: 1.800.637.6047  
    Local: 1.205.733.0333
- **Emergency telephone number:** 
  - ChemTel Inc.  
    +1 (800)255-3924, +1 (813)248-0585

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# 2 Hazard(s) identification

**HMIS CODES:**  
- **FIRE:** 4  
- **HEALTH:** 1  
- **REACTIVITY:** 1

- **Classification of the substance or mixture**
  - **GHS02 Flame**
  - Flam. Aerosol 1 H222 Extremely flammable aerosol.
  - **GHS04 Gas cylinder**
  - Press. Gas H280 Contains gas under pressure; may explode if heated.
  - **GHS07**
  - Acute Tox. 4 H332 Harmful if inhaled.
  - Skin Irrit. 2 H315 Causes skin irritation.
  - Eye Irrit. 2A H319 Causes serious eye irritation.
  - STOT SE 3 H336 May cause drowsiness or dizziness.

**Additional information:**

There are no other hazards not otherwise classified that have been identified.

0% of the mixture consists of component(s) of unknown toxicity.

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

(Cont'd. on page 2)
Trade name: Jungle Formula Insect Repellent

- **Hazard pictograms:**
  - GHS02
  - GHS04
  - GHS07

- **Signal word:** Danger
- **Hazard-determining components of labeling:**
  - propan-2-ol

- **Hazard statements:**
  - H222 Extremely flammable aerosol.
  - H280 Contains gas under pressure; may explode if heated.
  - H332 Harmful if inhaled.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H336 May cause drowsiness or dizziness.

- **Precautionary statements:**
  - P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  - P251 Do not pierce or burn, even after use.
  - P211 Do not spray on an open flame or other ignition source.
  - P261 Avoid breathing mist, vapors, or spray.
  - P264 Wash thoroughly after handling.
  - P280 Wear eye protection.
  - P271 Use only outdoors or in a well-ventilated area.
  - P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P312 Call a POISON CENTER/doctor if you feel unwell.
  - P362+P364 Take off contaminated clothing and wash it before reuse.
  - P405 Store locked up.
  - P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

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<th>Dangerous components:</th>
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(Cont’d. on page 3)
Trade name: Jungle Formula Insect Repellent

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<tr>
<th>Code</th>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>68476-85-7</td>
<td>Petroleum gases, liquefied</td>
<td>20-40%</td>
</tr>
<tr>
<td></td>
<td>Flam. Gas 1, H220</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Press. Gas, H280</td>
<td></td>
</tr>
<tr>
<td>113-48-4</td>
<td>N-(2-ethylhexyl)-8,9,10-trinorborn-5-ene-2,3-dicarboximide</td>
<td>2.5-5.0%</td>
</tr>
<tr>
<td></td>
<td>Acute Tox. 3, H311</td>
<td></td>
</tr>
</tbody>
</table>

Additional information:
For the listed ingredient(s), the identity and exact percentage(s) are being withheld as a trade secret.

4 First-aid measures

- **Description of first aid measures**
  - **General information:**
    Immediately remove any clothing soiled by the product.
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
    Take affected persons out into the fresh air.
  - **After inhalation:**
    Supply fresh air; consult doctor in case of complaints.
    Provide oxygen treatment if affected person has difficulty breathing.
    In case of irregular breathing or respiratory arrest provide artificial respiration.
  - **After skin contact:**
    Product is manufactured for topical use. If irritation occurs, discontinue use and wash affected area with soap and water.
    If skin irritation continues, consult a doctor.
  - **After eye contact:**
    Remove contact lenses if worn.
    Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - **After swallowing:**
    Unlikely route of exposure.
    Rinse out mouth and then drink plenty of water.
    Do not induce vomiting; immediately call for medical help.

- **Information for doctor**
  - **Most important symptoms and effects, both acute and delayed:**
    Headache
    Breathing difficulty
    Dizziness
    Coughing
    Irritant to skin and mucous membranes.
    Irritant to eyes.
    Nausea in case of ingestion.
    Gastric or intestinal disorders when ingested.
  - **Danger:** Harmful if inhaled.
  - **Indication of any immediate medical attention and special treatment needed:**
    If necessary oxygen respiration treatment.
    Treat frost-bitten areas appropriately.
5 Fire-fighting measures

- **Extinguishing media**
  - Suitable extinguishing agents:
    - Alcohol resistant foam
    - Water fog / haze
    - Carbon dioxide
    - Fire-extinguishing powder
  - **For safety reasons unsuitable extinguishing agents:** Water stream.

- **Special hazards arising from the substance or mixture**
  - Formation of toxic gases is possible during heating or in case of fire.
  - Danger of receptacles bursting because of high vapor pressure if heated.

- **Advice for firefighters**
  - **Protective equipment:**
    - Wear self-contained respiratory protective device.
    - Do not inhale explosion gases or combustion gases.
    - Wear fully protective suit.
  - **Additional information:**
    - Eliminate all ignition sources if safe to do so.
    - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
    - Cool endangered receptacles with water fog.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
  - Use respiratory protective device against the effects of fumes/dust/aerosol.
  - Wear protective equipment. Keep unprotected persons away.
  - Ensure adequate ventilation.
  - Keep away from ignition sources.
  - Protect from heat.
  - Particular danger of slipping on leaked/spilled product.

- **Environmental precautions:**
  - Do not allow to enter sewers/surface or ground water.
  - Inform respective authorities in case of seepage into water course or sewage system.

- **Methods and material for containment and cleaning up:**
  - Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).
  - Remove from the water surface (e.g. skim or suck off).
  - Dispose contaminated material as waste according to item 13.
  - Send for recovery or disposal in suitable receptacles.

- **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.
Trade name: Jungle Formula Insect Repellent

7 Handling and storage

- **Handling**
  - **Precautions for safe handling:**
    - Avoid splashes or spray in enclosed areas.
    - Use only in well ventilated areas.
    - Keep away from heat and direct sunlight.
  - **Information about protection against explosions and fires:**
    - Keep ignition sources away - Do not smoke.
    - Protect against electrostatic charges.
    - Pressurized container: protect from sunlight and do not expose to temperatures exceeding 120 °F / 49 °C, i.e. electric lights. Do not pierce or burn, even after use.
    - Do not spray on a naked flame or any incandescent material.

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

- **Storage**
  - **Requirements to be met by storerooms and receptacles:**
    - Observe official regulations on storing packagings with pressurized containers.
    - Provide ventilation for receptacles.
    - Avoid storage near extreme heat, ignition sources or open flame.
  - **Information about storage in one common storage facility:**
    - Store away from foodstuffs.
    - Store away from oxidizing agents.
  - **Further information about storage conditions:**
    - Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.

- **Specific end use(s):** No relevant information available.

8 Exposure controls/personal protection

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

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Long-term value</th>
<th>Short-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL (USA)</td>
<td>980 mg/m³, 400 ppm</td>
<td>1225 mg/m³, 500 ppm</td>
</tr>
<tr>
<td>REL (USA)</td>
<td>980 mg/m³, 400 ppm</td>
<td>984 mg/m³, 400 ppm</td>
</tr>
<tr>
<td>TLV (USA)</td>
<td>492 mg/m³, 200 ppm</td>
<td>492 mg/m³, 200 ppm</td>
</tr>
<tr>
<td>EL (Canada)</td>
<td>400 ppm</td>
<td>400 ppm</td>
</tr>
<tr>
<td>EV (Canada)</td>
<td>200 ppm</td>
<td>200 ppm</td>
</tr>
<tr>
<td>LMPE (Mexico)</td>
<td>400 ppm</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

(Cont'd. on page 6)
Trade name: Jungle Formula Insect Repellent

<table>
<thead>
<tr>
<th>68476-85-7 Petroleum gases, liquefied</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL (USA) Long-term value: 1800 mg/m³, 1000 ppm</td>
</tr>
<tr>
<td>REL (USA) Long-term value: 1800 mg/m³, 1000 ppm</td>
</tr>
<tr>
<td>TLV (USA) refer to Appendix F in TLVs and BEIs book</td>
</tr>
<tr>
<td>EL (Canada) Short-term value: 1250 ppm</td>
</tr>
<tr>
<td>Long-term value: 1000 ppm</td>
</tr>
<tr>
<td>EV (Canada) Long-term value: 1,000 ppm</td>
</tr>
<tr>
<td>LMPE (Mexico) Long-term value: 1000 ppm</td>
</tr>
</tbody>
</table>

Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>67-63-0 propan-2-ol</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI (USA) 40 mg/L</td>
</tr>
<tr>
<td>Medium: urine</td>
</tr>
<tr>
<td>Time: end of shift at end of workweek</td>
</tr>
<tr>
<td>Parameter: Acetone (background, nonspecific)</td>
</tr>
</tbody>
</table>

Exposure controls

Personal protective equipment:

General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases / fumes / aerosols. Avoid contact with the eyes. Avoid close or long term contact with the skin.

Engineering controls: No relevant information available.

Breathing equipment:

Not required under normal conditions of use. Use suitable respiratory protective device in case of insufficient ventilation. For spills, respiratory protection may be advisable.

Protection of hands:

Gloves are advised for repeated or prolonged contact. Protection may be required for spills. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Eye protection:

Safety glasses

Body protection: Protective work clothing

Limitation and supervision of exposure into the environment No relevant information available.
### 9 Physical and chemical properties

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

**· General information**

**· Appearance:**
- **Form:** Aerosol
- **Color:** Colorless
- **Odor:** Characteristic
- **Odor threshold:** Not determined.

**· pH-value:** Not determined.

**· Change in condition:**
- **Melting point/Melting range:** Not applicable, as aerosol.
- **Boiling point/Boiling range:** Not applicable, as aerosol.

**· Flash point:** Extremely flammable aerosol. Not applicable, as aerosol.

**· Flammability (solid, gaseous):** Not applicable.

**· Auto-ignition temperature:** Not determined.

**· Decomposition temperature:** Not determined.

**· Autoigniting:** Product is not self-igniting.

**· Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

**· Explosion limits:**
- **Lower:** Not determined.
- **Upper:** Not determined.

**· Oxidizing properties:** Not determined.

**· Vapor pressure:** Not determined.

**· Density at 20 °C (68 °F):** 0.88 g/cm³ (7.344 lbs/gal)

**· Relative density:** Not determined.

**· Vapor density:** Not determined.

**· Evaporation rate:** Not applicable.

**· Solubility in / Miscibility with:**
- **Water:** Insoluble.

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

**· Viscosity:**
- **Dynamic:** Not determined.
- **Kinematic:** Not determined.

**· Other information**
- No relevant information available.
10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
  Keep away from heat and direct sunlight.
  Danger of receptacles bursting because of high vapor pressure if heated.
- **Possibility of hazardous reactions:**
  Develops readily flammable gases / fumes.
  Reacts violently with oxidizing agents.
  Reacts with strong acids and alkali.
  Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.
  Toxic fumes may be released if heated above the decomposition point.
  Extremely flammable aerosol.
- **Conditions to avoid:**
  Excessive heat.
  Keep ignition sources away - Do not smoke.
  Store away from oxidizing agents.
- **Incompatible materials:** No relevant information available.
- **Hazardous decomposition products:**
  Carbon monoxide and carbon dioxide
  Hydrocarbons
  Nitrogen oxides (NOx)

11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity:**
  - **LD/LC50 values that are relevant for classification:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalative LC50/4h</th>
</tr>
</thead>
<tbody>
<tr>
<td>134-62-3 N,N-diethyl-m-toluamide</td>
<td>1950 mg/kg (rat)</td>
<td>3180 mg/kg (rabbit)</td>
<td>5.95 mg/l (rat)</td>
</tr>
<tr>
<td>113-48-4 N-(2-ethylhexyl)-8,9,10-trinorborn-5-ene-2,3-dicarboximide</td>
<td>2800 mg/kg (rat)</td>
<td>470 mg/kg (rat)</td>
<td></td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **On the skin:** Irritant to skin and mucous membranes.
  - **On the eye:** Irritating effect.
  - **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
  Inhalation of concentrated vapors as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.
## Carcinogenic categories
- **IARC (International Agency for Research on Cancer)**
  - 67-63-0 propan-2-ol
- **NTP (National Toxicology Program):**
  - None of the ingredients are listed.
- **OSHA-Ca (Occupational Safety & Health Administration):**
  - None of the ingredients are listed.

### Probable route(s) of exposure:
- Inhalation.
- Eye contact.
- Skin contact.

### Acute effects (acute toxicity, irritation and corrosivity):
- Vapors have narcotic effect.
- Harmful if inhaled.

### Repeated dose toxicity:
Repeated exposure may cause skin dryness or cracking.

### CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.

### STOT-single exposure:
May cause drowsiness or dizziness.

### STOT-repeated exposure:
Based on available data, the classification criteria are not met.

### Aspiration hazard:
Based on available data, the classification criteria are not met.

## Ecological information

### Toxicity
- **Aquatic toxicity:**
  - Toxic for aquatic organisms

### Aquatic toxicity:
- **113-48-4 N-(2-ethylhexyl)-8,9,10-trinorborn-5-ene-2,3-dicarboximide**
  - LC50 1.4 mg/l (Oncorhynchus mykiss)
- **136-45-8 dipropyl pyridine-2,5-dicarboxylate**
  - LC50 1.0 mg/l (Oncorhynchus mykiss)

### Persistence and degradability:
No relevant information available.

### Behavior in environmental systems:
No relevant information available.

### Mobility in soil:
No relevant information available.

### Ecotoxic effects:
- **Remark:** Due to mechanical actions of the product (e.g. agglutinations), damages may occur.

### Additional ecological information:
- **General notes:**
  - Do not allow product to reach ground water, water course or sewage system.
  - Also poisonous for fish and plankton in water bodies.
13 Disposal considerations

- Waste treatment methods
  - Recommendation: Contact waste processors for recycling information.
  - The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- Uncleaned packagings
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - DOT, ADR, IMDG, IATA
  - UN1950
- UN proper shipping name
  - Limited Quantity for packages less than 30 kg (66 lb) and inner packagings less than 1 L (0.3 gal).
  - DOT
  - ADR
  - IMDG
  - IATA
  - Aerosols
  - 1950 AEROSOLS, ENVIRONMENTALLY HAZARDOUS
  - AEROSOLS, MARINE POLLUTANT
  - Aerosols, flammable
- Transport hazard class(es)
  - DOT
    - Class
      - 2.1
    - Label
      - 2.1
  - ADR
    - 2 5F Gases
(Cont'd. on page 11)
## Trade name: Jungle Formula Insect Repellent

<table>
<thead>
<tr>
<th>· Label</th>
<th>2.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>· IMDG</td>
<td></td>
</tr>
<tr>
<td>· Class</td>
<td>2.1</td>
</tr>
<tr>
<td>· Label</td>
<td>2.1</td>
</tr>
<tr>
<td>· IATA</td>
<td></td>
</tr>
<tr>
<td>· Class</td>
<td>2.1</td>
</tr>
<tr>
<td>· Label</td>
<td>2.1</td>
</tr>
<tr>
<td>· Packing group</td>
<td>Aerosols are not assigned a packing group.</td>
</tr>
<tr>
<td>· Environmental hazards</td>
<td>Product contains environmentally hazardous substances: dipropyl pyridine-2,5-dicarboxylate</td>
</tr>
<tr>
<td>· Marine pollutant:</td>
<td>Symbol (fish and tree)</td>
</tr>
<tr>
<td>· Special marking (ADR):</td>
<td>Symbol (fish and tree)</td>
</tr>
<tr>
<td>· Special precautions for user</td>
<td>Warning: Gases</td>
</tr>
<tr>
<td>· Danger code (Kemler):</td>
<td>-</td>
</tr>
<tr>
<td>· EMS Number:</td>
<td>F-D,S-U</td>
</tr>
<tr>
<td>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· UN &quot;Model Regulation&quot;</td>
<td>UN 1950 AEROSOLS, 2.1</td>
</tr>
</tbody>
</table>

### 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - United States (USA)
  - SARA
    - Section 302 (extremely hazardous substances):
      None of the ingredients are listed.
    - Section 304 (emergency release notification):
      None of the ingredients are listed.
    - Sections 311/312 (hazardous chemical threshold planning quantity in pounds):
      None of the ingredients are listed.
    - Section 355 (extremely hazardous substances):
      None of the ingredients are listed.
Trade name: Jungle Formula Insect Repellent

- Section 313 (Specific toxic chemical listings):
  - 67-63-0 propan-2-ol
  - 136-45-8 dipropyl pyridine-2,5-dicarboxylate

- TSCA (Toxic Substances Control Act)
  Some ingredients listed.

- Proposition 65 (California)
  - Chemicals known to cause cancer:
    - 136-45-8 dipropyl pyridine-2,5-dicarboxylate
  - 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
  None of the ingredients are listed.

- EPA (Environmental Protection Agency):
  None of the ingredients are listed.

- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
  This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:
  KEEP OUT OF REACH OF CHILDREN
  PRECAUTIONARY STATEMENTS
  HAZARDS TO HUMANS AND DOMESTIC ANIMALS
  WARNING: Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.
  FIRST AID
  IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.
  IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or a doctor. Do not give anything by mouth to an unconscious person. Have the product container or label with you when calling a poison control center or doctor or going for treatment. For information regarding medicalemergencies or pesticide incidents, call 1-877-852-0086.
  STORAGE AND DISPOSAL
  Do not contaminate water, food, or feed by storage and disposal.
  PESTICIDE STORAGE: Keep this product in its tightly closed original container, when not in use. Store in a cool, dry (preferably locked) area that is inaccessible to children and animals.
  PESTICIDE DISPOSAL AND CONTAINER HANDLING: Do Not Puncture or Incinerate! Nonrefillable container. Do not reuse or refill this container. If empty: Place in trash or offer for recycling if available. If partly filled: Call your local solid waste agency for disposal instructions.
Trade name: Jungle Formula Insect Repellent

- IARC (International Agency for Research on Cancer):
  - 67-63-0 propan-2-ol

- NIOSH-Ca (National Institute for Occupational Safety and Health):
  - None of the ingredients are listed.

- Canadian substance listings
  - Canadian Domestic Substances List (DSL):
    - Some ingredients listed.
  - Canadian Ingredient Disclosure list (limit 0.1%):
    - None of the ingredients are listed.
  - Canadian Ingredient Disclosure list (limit 1%):
    - 67-63-0 propan-2-ol

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Date of preparation / last revision 11/25/2015 / -

- Abbreviations and acronyms:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - 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)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - BEI: Biological Exposure Limit
  - Flam. Gas 1: Flammable gases, Hazard Category 1
  - Flam. Aerosol 1: Flammable aerosols, Hazard Category 1
  - Press. Gas: Gases under pressure: Compressed gas
  - Flam. Liq. 2: Flammable liquids, Hazard Category 2
  - Acute Tox. 4: Acute toxicity, Hazard Category 4
  - Acute Tox. 3: Acute toxicity, Hazard Category 3
  - Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
  - STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

- Sources
  - Website, European Chemicals Agency (http://echa.europa.eu/)
  - Website, US EPA Substance Registry Services (http://ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do)
  - Website, Chemical Abstracts Registry, American Chemical Society (https://www.cas.org)
Trade name: Jungle Formula Insect Repellent

978-0-07-176923-5.
Safety Data Sheets, Individual Manufacturers
SECTION 1: Identification of the substance/mixture and of the company/undertaking

MANUFACTURER/DISTRIBUTOR: Rainbow Technology Corporation (800) 637-6047
CONTACT PERSON: Larry Joe Steeley, Jr.
EMERGENCY PHONE #(24 HRS): Chem-Tel, Inc. (800) 255-3924
TRADE NAME: Rainbow Jungle Formula Insect Repellent Towelettes
PRODUCT NUMBER: 4508
ISSUE DATE: June 8, 2015
REPLACES SDS DATED: September 7, 2010

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
(According to Regulation (EC) No 1272/2008)
Environmental Chronic Category 3
Serious Eye Damage/Eye Irritation Category 2
Skin Corrosion/Irritation Category 2

Signal Word:
Warning

Hazard Precautions:
H412 - Harmful to aquatic life with long lasting effects.
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.

2.2. Label elements

Hazard Symbols (Pictogram):

Prevention Precautions:
P273 - Avoid release to the environment.
P260 - Wear protective gloves/protective clothing/eye protection/face protection.
P264 - Wash hands thoroughly after handling.

First Aid Precautions:
P337+P313 - If eye irritation persists: Get medical advice/attention.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362 - Take off contaminated clothing and wash before reuse.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P321 - Specific treatment (see supplemental information on this label).
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
Storage Precautions:
Not required.

Disposal Precautions:
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

Single Exposure Target Organs:
Not applicable

Repeated Exposure Target Organs:
Not applicable

(According to Directive 67/548/EEC)
Symbol: Xn, Xi, F
Risk Phrases: R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R36/38: Irritating to eyes and skin.

2.3. Other hazards

Signs and Symptoms of Potential Overexposure: May be harmful if ingested in sufficient quantities. Non-irritating to intact skin; keep away from mucous membranes and abraded skin. Contact with eyes causes irritation. High gas, vapor, or mist concentrations may be harmful if inhaled. This product does not present an immediate concern for emergency personnel.

Primary Route(s) of Exposure: Ingestion. Skin contact. Eye contact. Inhalation.

Medical Conditions Aggravated by Exposure: No data found

SECTION 3: Composition/Information on ingredients

3.1. Substances or 3.2. Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>Concentration (%)</th>
<th>EINECS / ELINCS</th>
<th>EU Symbol</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>50 - 80</td>
<td>231-791-2</td>
<td>N/A</td>
<td>Not applicable</td>
</tr>
<tr>
<td>N,N-Diethyl-m-toluamide (DEET)</td>
<td>194-62-3</td>
<td>10 - 30</td>
<td>205-149-7</td>
<td>Xn, Xi</td>
<td>R22- R36/38- R52/53</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>8 - 12</td>
<td>200-578-6</td>
<td>F</td>
<td>R11</td>
</tr>
<tr>
<td>Other emulsifiers, emollients,</td>
<td>MULTIPLE</td>
<td>2 - 3</td>
<td>Not listed.</td>
<td>N/A</td>
<td>Not applicable</td>
</tr>
<tr>
<td>preservatives and fragrances (present at &lt; 1% each)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emollient</td>
<td>TRADE SECRET</td>
<td>2 - 3</td>
<td>Not listed.</td>
<td>N/A</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lubricant</td>
<td>TRADE SECRET</td>
<td>2 - 3</td>
<td>Not listed.</td>
<td>N/A</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

NOTE: See Section 8 of this MSDS for exposure limit data for these ingredients. See Section 15 of this MSDS for trade secret information (where applicable). See Section 16 of this MSDS for the full text of the R-phrases above.

SECTION 4: First aid measures

4.1. Description of first aid measures

Skin Contact: Keep away from mucous membranes and abraded skin
Eye Contact: Can cause moderate irritation. Immediately flush the eyes with plenty of water for at least 15 minutes. Call a physician.
Inhalation: High gas vapor or mist concentrations may be harmful if inhaled
Ingestion: May be harmful if ingested.
4.2. Most important symptoms and effects, both acute and delayed

Acute: May be harmful if ingested in sufficient quantities. Non-irritating to intact skin; keep away from mucous membranes and abraded skin. Contact with eyes causes irritation. High gas, vapor, or mist concentrations may be harmful if inhaled. This product does not present an immediate concern for emergency personnel.

Delayed Effects: None known.

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

Thermal Exposure: Not applicable.

Note to Physician: No additional first aid information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Appropriate Extinguishing Media: Foam Dry chemical Water spray Carbon dioxide

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion: As with other organic materials, combustion will produce carbon monoxide and carbon dioxide.

Potential for Dust Explosion: not available

Special Flammability Hazards: Not applicable.

5.3. Advice for firefighters

Basic Fire Fighting Guidance: Wear self-contained breathing apparatus and protective clothing. Normal firefighting procedures may be used.

Flammability Classification (OSHA): Not applicable.

NFPA Rating

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuation Procedures: Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Special Instructions: Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4. Leather shoes that have been saturated must be discarded.

6.2. Environmental precautions

Prevent releases to soils, drains, sewers, and waterways.

6.3. Methods and material for containment and cleaning up

Containment Techniques and Clean-up Procedures: Contain spilled liquid with sand or vermiculite and place in chemical waste container Prevent runoff from entering drains, sewers, and streams

Special Reporting Requirements: Not applicable.

6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.
SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for Unique Hazards: Not applicable.
Practices to Minimize Risk: Wear appropriate protective equipment when performing maintenance on contaminated equipment.
Wash hands thoroughly before eating or smoking after handling this material.
Special Handling Equipment: Avoid contact with eyes, skin, and clothing.
Use with adequate ventilation.
Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities
Storage Precautions & Recommendations: This product should be stored at ambient temperature in a dry, well-ventilated location. Keep container closed when not in use.
Dangerous Incompatibility Reactions: Incompatible with oxidizing materials.
Incompatibilities with Materials of Construction: none known

7.3. Specific end use(s)
If a chemical safety assessment has been completed an exposure scenario is attached as an annex to this Safety Data Sheet. Refer to this annex for the specific exposure scenario control parameters for uses identified in subsection 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Exposure Limits (United States): OSHA PEL: 1000 ppm TWA; 1900 mg/m3 ACGIH TLV: 1000 ppm STEL TWA

8.2. Exposure controls
Also see the annex to this SDS (if applicable) for specific exposure scenario controls.
Personal Protective Equipment: Goggles or glasses with side shields. Clothing should be sufficient to minimize physical contact. The use of a NIOSH-approved organic vapor respirator is recommended whenever this product is used in a confined space or heated above ambient temperature.
Ventilation: All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided.
Other Engineering Controls: All appropriate engineering controls should be used to minimize exposure potential. Use exhaust ventilation to keep airborne concentrations below exposure limits.
Thermal Hazards: Not applicable.
Additive or Synergistic Effects: None known.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Appearance, State & Odor (ambient temperature): Moist Towelette
Molecular Formula: mixture
Vapor Pressure: Not available.
Specific Gravity or Density: 1.000
Boiling Point: 291.7 °C @ 760 mm Hg
Solubility in Water: water emulsion
pH: 5.0 - 7.5 @ 1% aqueous solution
Viscosity: Not available.
Flash Point and Method: > 201°F (> 94°C) (COC)
Molecular Weight: mixture
Evaporation Rate: < 1 (Buty/ Acetate = 1)
Vapor Density (air = 1): Not available.
Freezing / Melting Point: Not available. Not available.
Octanol / Water Coefficient: Not available.
Odor Threshold: Fragrance added
Autoignition Temperature: Not available.
Flammable Limits: Not available. (LEL) – Not available. (UEL)

9.2. Other information
Not applicable.
Skin Irritation: Moderately irritating to skin.
Skin Sensitization: Negative skin sensitizer
Eye Irritation: Slight to moderate erythema observed in eyes in contact with material over 20 minutes to 3 hours.
Target Organs: No data available.
Carcinogenicity: Mice and rabbits exposed dermally to 0.02 mL of 10, 50 and 100% concentrations of DEET twice a week for 160 weeks had no significant differences in the number of tumors compared to controls.
Teratogenicity: No data available.
Reproduction: No data available.
Neurotoxicity: No data available.
Mutagenicity: No data available.
Additional Toxicity Information: Skin irritation (rabbit): 50 mg: slightly irritating
Eye Irritation (rabbit): 100 mg: moderately irritating

SECTION 12: Ecological information

12.1. Toxicity
Aquatic EC50 (48h) Daphnia = 56 - 100 ppm
Aquatic LC50 (96h) Oncorhynchus mykiss (rainbow trout) = 71.25 ppm
Aquatic LC50 (96h) Pimephales promelas (fathead minnow) = 110 mg/L
Aquatic LC50 Colinus virginianus (Northern bobwhite quail) = 1375 mg/kg
48 HR EC50 DAPHNIA MAGNA 2 MG/L [STATIC]
24 HR EC50 DAPHNIA MAGNA 10800 mg/L
48 HR LC50 DAPHNIA MAGNA 9268 - 14221 mg/L
96 HR LC50 PIMEPHALES PROMELAS > 100 MG/L [STATIC]

12.2. Persistence and degradability
No data
Not expected to bioaccumulate. Modeling suggests rapid degradation in the atmosphere; biodegradation data suggests moderate rate of biodegradation.

12.3. Bioaccumulative potential
No data

12.4. Mobility in soil
No data

12.5. Results of PBT and vPvB assessment
Not available.

12.6. Other adverse effects
Not predicted to exhibit significant toxicity to fish. Ecotoxicological data are for individual components of this mixture.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
US EPA Waste Number: Not applicable

Waste Disposal:
Dispose of this material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.
14.1. UN number
Not applicable

14.2. UN proper shipping name
Chemicals, n.o.s. (DEET, ethanol)

14.3. Transport hazard class(es)
Not applicable

14.4. Packing group
Not applicable

14.5. Environmental hazards
Not applicable

14.6. Special precautions for user
Not available.

NA Emergency Guidebook Numbers: Not applicable
IMDG EMS: Not applicable

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

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
OSHA Hazards: Health: Irritant (eye).
Physical: Not applicable.

WHMIS Classification: Class D, Division 2, Subdivision B: Irritant.
Class B, Division 3: Combustible Liquid.

Chemical Inventory Lists: Status
TSCA: Present
EINECS: 231-791-2
205-149-7
200-578-6

Canada(DSL/NDSL):
Japan:
(3)-1677; (3)-1421; (3)-1321
(2)-202

Korea:
KE-35400
KE-10492
KE-13217

Australia: Present
New Zealand: Present
China: Present
Philippines: Present
Switzerland: G-2482

New Zealand GHS Classification: Not classified by this country.

Japan GHS Classification: Not classified by this country.

Korea (MOL) GHS Classification: Not classified by this country.

Australia GHS Classification: Not classified by this country.

Taiwan GHS Classification: Not classified by this country.

Indonesia GHS Classification: Not classified by this country.

SARA 313: Not applicable

Other Regulatory Listings: This product is regulated under the PMRA in Canada. It must be used for purposes consistent with its labeling.
This product is regulated under the Federal Insecticide, Fungicide and Rodenticide Act. It must be used for purposes consistent with its labeling.

15.2. Chemical safety assessment
Not applicable.
SECTION 16: Other information

Full text of R phrases in Section 3:  
R22: Harmful if swallowed.  
R36/38: Irritating to eyes and skin.  
R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R11: Highly Flammable.

Legend of abbreviations:  
ACGIH = American Conference on Governmental Industrial Hygienists.  
CAS = Chemical Abstract Service.  
DSL/NDSL = Domestic Substances List/Non-Domestic Substances List.  
EC = European Community.  
EEC = European Economic Community.  
EINECS = European Inventory of Existing Commercial Chemical Substances.  
ELINCS = European List of Notified Chemical Substances.  
EU = European Union.  
GHS = Globally Harmonized System.  
LC = Lethal concentration.  
LD = Lethal dose.  
MOL = Ministry of Labor.  
NEMA = National Emergency Management Agency.  
NIOSH = National Institute of Occupational Safety and Health.  
NTP = National Toxicological Program.  
OSHA = Occupational Safety and Health Administration.  
PEL = Permissible exposure limit.  
RQ = Reportable quantity.  
TLV = Threshold limit value.  
WHMIS = Workplace Hazardous Materials Information System.

Precautionary Statement: Please note that the information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.