

SAFETY DATA SHEET

SECTION 1) CHEMICAL PRODUCT AND SUPPLIER'S IDENTIFICATION

Product ID: 496515
Product Name: ZenCircuit
Revision Date: Nov 18, 2016 **Supersedes Date:** Oct 21, 2015
Version: 1.0
Manufacturer's Name: Zenex International
Address: 1 Zenex Circle Cleveland, OH, US, 44146
Emergency Phone: 1-800-535-5053
Information Phone Number: (440)-232-4155
Fax:
Product/Recommended Uses: Contact Cleaner

SECTION 2) HAZARDS IDENTIFICATION

Classification:

Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) - Category 3
Aerosols Category 2
Skin Irritation - Category 2
Eye Irritation - Category 2B
Carcinogenicity - Category 1B
Reproductive Toxicity - Category 1B
Acute aquatic toxicity - Category 3
Chronic aquatic toxicity - Category 3
Acute toxicity, Oral - Category 4

Pictograms:



Signal Word:

Danger

Hazardous Statements - Physical:

H223 - Flammable aerosol
H229 - Pressurized container: May burst if heated

Hazardous Statements - Health:

H335 - May cause respiratory irritation
H315 - Causes skin irritation
H320 - Causes eye irritation
H350 - May cause cancer.
H360 - May damage fertility or the unborn child.
H302 - Harmful if swallowed

Hazardous Statements - Environmental:

H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements - General:

- P101 - If medical advice is needed, have product container or label at hand.
- P102 - Keep out of reach of children.
- P103 - Read label before use.

Precautionary Statements - Prevention:

- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
- P271 - Use only outdoors or in a well-ventilated area.
- P264 - Wash thoroughly after handling.
- P280 - Wear eye protection/face protection.
- P202 - Do not handle until all safety precautions have been read and understood.
- P273 - Avoid release to the environment.
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P270 - Do not eat, drink or smoke when using this product.
- P211 - Do not spray on an open flame or other ignition source.
- P251 - Do not pierce or burn, even after use.

Precautionary Statements - Response:

- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
- P332 + P313 - If skin irritation occurs: Get medical advice/attention.
- P362 + P364 - Take off contaminated clothing and wash it before reuse.
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313 - If eye irritation persists: Get medical advice/attention.
- P308 + P313 - IF exposed or concerned: Get medical advice/attention.
- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330 - Rinse mouth.

Precautionary Statements - Storage:

- P403 + P405 - Store in a well-ventilated place. Store locked up.
- P410 - Protect from sunlight.
- P412 - Do not expose to temperatures exceeding 50 °C/122 °F.

Precautionary Statements - Disposal:

- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

SECTION 3) COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Chemical Name	% By Weight
0000106-94-5	1-BROMOPROPANE	58% - 98%
0000075-37-6	DIFLUOROETHANE	20% - 34%

SECTION 4) FIRST-AID MEASURES

Inhalation:

- Remove source of exposure or move person to fresh air and keep comfortable for breathing.
- If exposed/feel unwell/concerned: Call a POISON CENTER/doctor.
- Eliminate all ignition sources if safe to do so.

Eye Contact:

Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists: Get medical advice/attention.

Skin Contact:

Take off immediately all contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Gently blot or brush away excess product. Wash with plenty of lukewarm, gently flowing water for a duration of 15-20 minutes. Call a POISON CENTER/doctor if you feel unwell. Store contaminated clothing under water and wash before reuse or discard.

Ingestion:

Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. If vomiting occurs naturally, lie on your side, in the recovery position.

Never give anything by mouth to an unconscious or convulsing victim. Keep person warm and quiet.

SECTION 5) FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Use water, fog, dry chemical, or carbon dioxide.

Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Unsuitable Extinguishing Media:

Water may be ineffective but can be used to cool containers exposed to heat or flame.

Specific Hazards in Case of Fire:

Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force.

Aerosol cans may rupture when heated.

Heated cans may burst.

In fire, will decompose to carbon dioxide, carbon monoxide

Fire-Fighting Procedures:

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel.

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Special Protective Actions:

Wear protective pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Care should always be exercised in dust/mist areas.

SECTION 6) ACCIDENTAL RELEASE MEASURES

Emergency Procedure:

Keep unnecessary people away; isolate hazard area and deny entry. Do not touch or walk through spilled material. Clean up immediately. Use absorbent sweeping compound to soak up material and put into suitable container for proper disposal.

Recommended Equipment:

Safety glasses, gloves, vapor respirator

Personal Precautions:

Avoid breathing vapor. Avoid contact with skin, eye or clothing. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing.

Environmental Precautions:

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

SECTION 7) HANDLING AND STORAGE

General:

For industrial and institutional use only.
 For use by trained personnel only.
 Keep away from children.
 Wash hands after use.
 Do not get in eyes, on skin or on clothing.
 Do not breathe vapors or mists.
 Use good personal hygiene practices.
 Eating, drinking and smoking in work areas is prohibited.
 Remove contaminated clothing and protective equipment before entering eating areas.
 Eyewash stations and showers should be available in areas where this material is used and stored.

Ventilation Requirements:

Use only with adequate ventilation to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source.

Storage Room Requirements:

Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight and incompatibilities. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Indoor storage should meet OSHA standards and appropriate fire codes. Containers that have been opened must be carefully resealed to prevent leakage. Empty container retain residue and may be dangerous.

Do not cut, drill, grind, weld, or perform similar operations on or near containers. Do not pressurize containers to empty them. Ground all structures, transfer containers and equipment to conform to the national electrical code. Use procedures that prevent static electrical sparks. Static electricity may accumulate and create a fire hazard.

Store at temperatures below 120°F.

SECTION 8) EXPOSURE CONTROLS, PERSONAL PROTECTION

Eye Protection:

Chemical goggles, safety glasses with side shields or vented/splash proof goggles. Contact lenses may absorb irritants. Particles may adhere to lenses and cause corneal damage.

Skin Protection:

Wear gloves, long sleeved shirt, long pants and other protective clothing as required to minimize skin contact.

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Chemical-resistant clothing is recommended to avoid prolonged contact. Avoid unnecessary skin contact.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapors.

When spraying more than one half can continuously or more than one can consecutively, use NIOSH approved respirator.

Chemical Name	OSHA TWA (ppm)	OSHA TWA (mg/m3)	OSHA STEL (ppm)	OSHA STEL (mg/m3)	OSHA Tables (Z1, Z2, Z3)	OSHA Carcinogen	OSHA Skin designation	NIOSH TWA (ppm)	NIOSH TWA (mg/m3)	NIOSH STEL (ppm)	NIOSH STEL (mg/m3)	NIOSH Carcinogen
1-BROMOPROPANE												
DIFLUOROETHANE		2.5			1							

Chemical Name	ACGIH TWA (ppm)	ACGIH TWA (mg/m3)	ACGIH STEL (ppm)	ACGIH STEL (mg/m3)
1-BROMOPROPANE	0.1			
DIFLUOROETHANE		2.5		

SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Density 10.09149 lb/gal
 Density VOC 7.56862 lb/gal

% VOC	75.00000%
VOC Actual	7.56862 lb/gal
lb VOC/gal Solid	0.00000 lb/gal
VOC Regulatory	7.56862 lb/gal
lb VOC/lb Solid	0.00000 lb/lb

Appearance	N.A.
Odor Threshold	N.A.
Odor Description	Solvent
pH	N.A.
Water Solubility	Nil
Flammability	Flashpoint below 73 °F
Flash Point Symbol	N.A.
Flash Point	72 °F
Viscosity	N.A.
Lower Explosion Level	3.9
Upper Explosion Level	16.9
Vapor Pressure	N.A.
Vapor Density	Slower than ether
Melting Point	N.A.
Freezing Point	N.A.
Low Boiling Point	0 °F
High Boiling Point	158 °F
Decomposition Pt	0
Auto Ignition Temp	N.A.
Evaporation Rate	Slower than ether

SECTION 10) STABILITY AND REACTIVITY

Stability:

Stable.

Conditions to Avoid:

High temperatures.

Incompatible Materials:

None known.

Hazardous Reactions/Polymerization:

Will not occur.

Hazardous Decomposition Products:

In fire, will decompose to carbon dioxide, carbon monoxide.

SECTION 11) TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation:

Overexposure will cause defatting of skin.

Serious Eye Damage/Irritation:

Overexposure will cause redness and burning sensation.

Carcinogenicity:

May cause cancer.

Germ Cell Mutagenicity:

No data available

Reproductive Toxicity:

May damage fertility or the unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)

Respiratory/Skin Sensitization:

No data available

Specific Target Organ Toxicity - Single Exposure:

May cause respiratory irritation

Specific Target Organ Toxicity - Repeated Exposure:

No data available

Aspiration Hazard:

No data available

Acute Toxicity:

Inhalation: effect of overexposure include irritation of respiratory tract, headache, dizziness, nausea, and loss of coordination. Extreme overexposure may result in unconsciousness and possibly death.

0000075-65-0 TERT-BUTYL ALCOHOL

LD50 (oral, rat): 3,500 mg/kg (1)

LD50 (oral, rabbit): 3,600 mg/kg (1)

0000075-05-8 ACETONITRILE

LC50 (oral, adult rat): 3500 mg/kg (17)

LC50 (oral, young adult rat): 3100 mg/kg (17)

LC50 (oral, 14 day old rat): 160 mg/kg (17)

LC50 (oral, mouse): 269 mg/kg (14)

LC50 (oral, guinea pig): 177 mg/kg (15)

LD50 (oral, rat): 3800 mg/kg (12)

SECTION 12) ECOLOGICAL INFORMATION

Toxicity:

Harmful to aquatic life with long lasting effects

Persistence and Degradability:

No data available.

Bio-Accumulative Potential:

No data available.

Mobility in Soil:

No data available.

Other Adverse Effects:

No data available.

SECTION 13) DISPOSAL CONSIDERATIONS

Water Disposal:

Under RCRA, it is the responsibility of the user of the product, to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state, and local laws.

Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.

SECTION 14) TRANSPORT INFORMATION

U.S. DOT Information:

Consumer Commodity, ORM-D

IMDG Information:

Consumer Commodity, ORM-D

IATA Information:

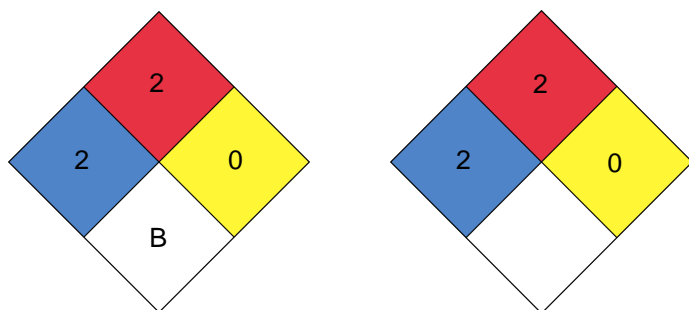
Consumer Commodity, ORM-D

SECTION 15) REGULATORY INFORMATION

CAS	Chemical Name	% By Weight	Regulation List
0000106-94-5	1-BROMOPROPANE	58% - 98%	SARA312,VOC,TSCA,ACGIH,CA_Prop65 - California Proposition 65
0000075-37-6	DIFLUOROETHANE	20% - 34%	SARA312,TSCA,ACGIH

SECTION 16) OTHER INFORMATION**Glossary:**

ACGIH- American Conference of Governmental Industrial Hygienists; ANSI- American National Standards Institute; Canadian TDG- Canadian Transportation of Dangerous Goods; CAS- Chemical Abstract Service; Chemtrec- Chemical Transportation Emergency Center (US); CHIP- Chemical Hazard Information and Packaging; DSL- Domestic Substances List; EC- Equivalent Concentration; EH40 (UK)- HSE Guidance Note EH40 Occupational Exposure Limits; EPCRA- Emergency Planning and Community Right-To-Know Act; ESL- Effects screening levels; HMIS- Hazardous Material Information Service; LC- Lethal Concentration; LD- Lethal Dose; NFPA- National Fire Protection Association; OEL- Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US Department of Labor; PEL- Permissible Exposure Limit; SARA (Title III)- Superfund Amendments and Reauthorization Act; SARA 313- Superfund Amendments and Reauthorization Act, Section 313; SCBA- Self-Contained Breathing Apparatus; STEL- Short Term Exposure Limit; TCEQ - Texas Commission on Environmental Quality; TLV- Threshold Limit Value; TSCA- Toxic Substances Control Act Public Law 94-469; TWA - Time Weighted Value; US DOT- US Department of Transportation; WHMIS- Workplace Hazardous Materials Information System.

HMIS

Chronic :

**DISCLAIMER**

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.