SECTION 1 - CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: GRADE 1054
PRODUCT USE: Solvent
Not recommended for: Consumer Use
Manufacturer/Supplier:
PANNIER CORPORATION
207 SANDUSKY STREET
PITTSBURGH, PA 15212-5823 U.S.A.
412-323-4900
SALES@PANNIER.COM

24 Hr Emergency Telephone Number: Infotrac 800-535-5053

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification (GHS-US):
Flam. Liq. 4 - H227 - Combustible liquid
Acute Tox. 4 (Oral) - H302 - Harmful if swallowed
Acute Tox. 3 (Dermal) - H311 - Toxic in contact with skin
Acute Tox. 4 (Inhalation:dust,mist) - H332 - Harmful if inhaled
Skin Irrit. 2 - H315 - Causes skin irritation

Full text of H-phrases: see section 16

Label elements
GHS-US labeling
Hazard pictograms (GHS-US):

Signal word (GHS-US): GHS07 - Danger
Hazard statements (GHS-US):
H227 - Combustible liquid
H302+H332 - Harmful if swallowed or if inhaled
H311 - Toxic in contact with skin
H315 - Causes skin irritation

Precautionary statements (GHS-US):
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P261 - Avoid breathing mist, spray, vapors
P264 - Wash hands, forearms and face, clothing thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P312 - If swallowed: Call a doctor or poison center if you feel unwell
P302+P352 - If on skin: Wash with plenty of water
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P312 - Call a doctor or poison center if you feel unwell
P313 - Specific treatment (see a doctor or poison center on this label)
P330 - Rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P361 - Take off immediately all contaminated clothing
P362 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), dry extinguishing powder to extinguish
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Substance Name: BUTYL CELLOSOLVE

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
</table>
| 2-butoxyethanol| (CAS No) 111-76-2  | < 99.5 | Flam. Liq. 4, H227  
|                |                    |     | Acute Tox. 4 (Oral), H302                    |
|                |                    |     | Acute Tox. 3 (Dermal), H311                   |
|                |                    |     | Acute Tox. 4 (Inhalation:dust,mist), H332    |
|                |                    |     | Skin Irrit. 2, H315                           |

Full text of H-phrases: see section 16

Mixture: Not applicable

SECTION 4 - FIRST AID MEASURES

Description of first aid measures

First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Allow victim to breathe fresh air. Allow the victim to rest. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact: Immediately call a poison center or doctor/physician. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Specific measures (see Consult a doctor/medical service on this label). Wash contaminated clothing before reuse. If skin irritation occurs: Gently wash with plenty of soap and water. Get medical advice/attention. Specific treatment (see Consult a doctor/medical service on this label).

First-aid measures after eye contact: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.

Symptoms/injuries after skin contact: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin. Causes skin irritation.

Symptoms/injuries after ingestion: Swallowing a small quantity of this material will result in serious health hazard.

Indication of any immediate medical attention and special treatment needed: No additional information available

SECTION 5 - FIRE FIGHTING MEASURES

Extinguishing media


Unsuitable extinguishing media: Do not use a heavy water stream.

Special hazards arising from the substance or mixture

Fire hazard: Combustible liquid.

Explosion hazard: May form flammable/explosive vapor-air mixture.

Advice for firefighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

General measures: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
SAFETY DATA SHEET

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For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

For emergency responders
Protective equipment: Equip cleanup crew with proper protection.
Emergency procedures: Ventilate area.

Environmental precautions Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

Methods and material for containment and cleaning up
Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Reference to other sections See Heading 8. Exposure controls and personal protection.

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling
Additional hazards when processed: Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Precautions for safe handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only outdoors or in a well-ventilated area. Avoid breathing mist, spray, vapors.

Hygiene measures: Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

Conditions for safe storage, including any incompatibilities
Technical measures: Proper grounding procedures to avoid static electricity should be followed.

Storage conditions: Keep only in the original container in a cool, well ventilated place away from : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container closed when not in use. Keep in fireproof place.

Incompatible products: Strong bases. Strong acids.

Incompatible materials: Sources of ignition. Direct sunlight. Heat sources.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters
2-butoxyethanol (111-76-2)

<table>
<thead>
<tr>
<th></th>
<th>ACGIH TWA (ppm)</th>
<th>ACGIH STEL (ppm)</th>
<th>Remark (ACGIH)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>OSHA PEL (TWA) (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>20 ppm</td>
<td>20 ppm</td>
<td>Eye &amp; URT irr</td>
<td>240 mg/m³</td>
<td>50 ppm</td>
</tr>
</tbody>
</table>

Exposure controls
Personal protective equipment: Avoid all unnecessary exposure.

Hand protection: Wear protective gloves.
Eye protection: Chemical goggles or safety glasses.
Skin and body protection: Wear suitable protective clothing.
Respiratory protection: Wear appropriate mask.
Other information: Do not eat, drink or smoke during use.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Color: Colorless
Odor: characteristic
Odor threshold: No data available
pH: No data available
Melting point: No data available
Freezing point: No data available
Boiling point: 340 - 344 °F
Flash point: 154 - 158 °F
Relative evaporation rate (butyl acetate=1): No data available
Flammability (solid, gas): No data available
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Explosion limits: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Vapor pressure: No data available
Relative density: No data available
Relative vapor density at 20 °C: No data available
Solubility Water: Solubility in water of component(s) of the mixture:
Log Pow: No data available
Auto-ignition temperature 446 - 473 °F
Decomposition temperature: No data available
Viscosity:
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available

Other information No additional information available

SECTION 10 - STABILITY AND REACTIVITY
Reactivity No additional information available
Chemical stability
Combustible liquid. May form flammable/explosive vapor-air mixture.
Possibility of hazardous reactions Not established.
Incompatible materials Strong acids. Strong bases.

SECTION 11 - TOXICOLOGICAL INFORMATION
Information on toxicological effects
Acute toxicity:
Oral: Harmful if swallowed. Dermal: Toxic in contact with skin. Inhalation: dust, mist: Harmful if inhaled.

BUTYL CELLOSOLVE
ATE US (oral) 532.663 mg/kg body weight
ATE US (dermal) 437.186 mg/kg body weight
2-butoxyethanol (111-76-2) IARC group 3 - Not classifiable
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): Not classified
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified

Potential Adverse human health effects and symptoms: Based on available data, the classification criteria are not met. Harmful if swallowed. Harmful if inhaled. Toxic in contact with skin.

Symptoms/injuries after inhalation: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.

Symptoms/injuries after skin contact: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin. Causes skin irritation.

Symptoms/injuries after ingestion: Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12 - ECOLOGICAL INFORMATION
Toxicity
2-butoxyethanol (111-76-2)
LC50 fish 1 116 ppm (96 h; Cyprinodon variegatus; Nominal concentration)
EC50 Daphnia 1 1700 mg/l (48 h; Daphnia sp.; Nominal concentration)
LC50 fish 2 1341 ppm (96 h; Lepomis macrochirus)
EC50 Daphnia 2 1720 mg/l (24 h; Daphnia magna)
TLM fish 1 100 - 1000,96 h; Pisces
TLM other aquatic organisms 1 100 - 1000,96 h
Threshold limit algae 1 900 mg/l (168 h; Scenedesmus quadricauda)
Threshold limit algae 2 35 mg/l (192 h; Microcystis aeruginosa)

Persistence and degradability
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Persistence and degradability
2-butoxyethanol (111-76-2)
Not established.

Persistence and degradability
Readily biodegradable in water. Biodegradable in the soil.
Photodegradation in the air.

Biochemical oxygen demand (BOD) 0.71 g O₂/g substance
Chemical oxygen demand (COD) 2.20 g O₂/g substance

2-butoxyethanol (111-76-2)
ThOD
2.305 g O₂/g substance
BOD (% of ThOD)
0.31 % ThOD

Bioaccumulative potential
BUTYL CELLOSOLVE
Bioaccumulative potential
Not established.

2-butoxyethanol (111-76-2)
Log Pow
0.81 (Experimental value; BASF test; 25 °C)
Bioaccumulative potential
Low potential for bioaccumulation (Log Kow < 4).

2-butoxyethanol (111-76-2)
Surface tension
0.027 N/m (25 °C)

Other adverse effects
Effect on the global warming:
No known ecological damage caused by this product.
Other information:
Avoid release to the environment.

SECTION 13 - DISPOSAL CONSIDERATIONS
Waste treatment methods
Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to an approved hazardous waste plant and/or drum reconditioner.
Additional information: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials: Hazardous waste due to toxicity. Avoid release to the environment.

SECTION 14 - TRANSPORT INFORMATION
Department of Transportation (DOT) In accordance with DOT Not regulated for transport
TDG No additional information available
Transport by sea No additional information available
Air transport No additional information available

SECTION 15 - REGULATORY INFORMATION
US Federal regulations
2-butoxyethanol (111-76-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
International regulations
CANADA No additional information available
EU-Regulations No additional information available
National regulations No additional information available
US State regulations No additional information available

SECTION 16 - OTHER INFORMATION
Other information: None.
Full text of H-phrases:
----- Acute Tox. 3 (Dermal) Acute toxicity (dermal) Category 3
----- Acute Tox. 4 (Inhalation: dust, mist) Acute toxicity (inhalation: dust, mist) Category 4
----- Acute Tox. 4 (Oral) Acute toxicity (oral) Category 4
----- Flam. Liq. 4 Flammable liquids Category 4
----- Skin Irrit. 2 Skin corrosion/irritation Category 2
----- H227 Combustible liquid
----- H302 Harmful if swallowed
----- H311 Toxic in contact with skin
Causes skin irritation
Harmful if inhaled
2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.
0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
2 Moderate Hazard - Temporary or minor injury may occur
2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)
0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

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