

# Vanquish

## Safety Data Sheet

### SECTION 1: Product and company identification

Trade name : Vanquish  
Use of the substance/mixture : Herbicide  
Industrial use  
Product code : 0314  
Company : Titan Industrial Chemicals, LLC  
PO Box 635  
Grover, MO 63040-0635 - USA  
T (636) 273-9033  
Emergency number : Infotrac: (800) 535-5053

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (GHS-US)

Flam. Liq. 4 H227  
Eye Irrit. 2A H319  
Asp. Tox. 1 H304  
Full text of H-phrases: see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) : Danger  
Hazard statements (GHS-US) : Combustible liquid  
May be fatal if swallowed and enters airways  
Causes serious eye irritation  
Precautionary statements (GHS-US) : Keep away from heat, open flames, sparks. - No smoking  
Wash thoroughly after handling  
Wear protective clothing, eye protection, protective gloves  
If swallowed: Immediately call a doctor, a POISON CENTER  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Do NOT induce vomiting  
If eye irritation persists: Get medical advice/attention  
In case of fire: Use ABC-powder, alcohol resistant foam, carbon dioxide (CO<sub>2</sub>) to extinguish  
Store in a well-ventilated place. Keep cool  
Store locked up  
Dispose of contents/container to comply with local/regional/national regulations

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Not applicable  
Full text of H-phrases: see section 16

#### 3.2. Mixture

| Name  | Product identifier  | %        | Classification (GHS-US)                 |
|---|---------------------|----------|---|
| hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics | (CAS No) 64742-47-8 | 60 - 100 | Flam. Liq. 4, H227<br>Asp. Tox. 1, H304 |
| Alkanes, C14-16   | (CAS No) 90622-46-1 | 10- 30   | Asp. Tox. 1, H304                       |

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| Name   | Product identifier | %         | Classification (GHS-US)   |
|--|--------------------|-----------|---|
| 2-(2-butoxyethoxy)ethanol, diethylene glycol monobutyl ether | (CAS No) 112-34-5  | 10- 30    | Eye Irrit. 2A, H319   |
| 2-ethylhexyl 2,4-dichlorophenoxyacetate                      | (CAS No) 1928-43-4 | 0.5 - 1.5 | Acute Tox. 4 (Oral), H302   |
| Glycol Ether EB  | (CAS No) 111-76-2  | 0.1 - 1.0 | Flam. Liq. 4, H227<br>Acute Tox. 4 (Oral), H302<br>Skin Irrit. 2, H315<br>Eye Irrit. 2A, H319<br>STOT RE 2, H373<br>Asp. Tox. 1, H304 |

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : If breathing is difficult, 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 : Take off immediately all contaminated clothing and wash it before reuse. Wash skin with plenty of water. Soap may be used. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : If you feel unwell, seek medical advice.
- Symptoms/injuries after inhalation : Irritation of the respiratory tract.
- Symptoms/injuries after skin contact : Irritation. Repeated exposure may cause skin dryness or cracking.
- Symptoms/injuries after eye contact : Causes serious eye irritation.
- Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.

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

No additional information available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : ABC powder. Alcohol-resistant foam. Carbon dioxide.
- Unsuitable extinguishing media : Do not use a heavy water stream.

#### 5.2. Special hazards arising from the substance or mixture

- Reactivity : On burning: release of toxic and corrosive gases/vapours (nitrous vapours, sulphur oxides, carbon monoxide - carbon dioxide). If the product is involved in a fire, it can release toxic chlorine gases. Reacts violently with (strong) oxidizers.

#### 5.3. Advice for firefighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Take account of environmentally hazardous firefighting water.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : No flames, No sparks. Eliminate all sources of ignition.

##### 6.1.1. For non-emergency personnel

- Protective equipment : Protective goggles. Gloves. Protective clothing.
- Emergency procedures : Evacuate unnecessary personnel. No naked flames or sparks.

##### 6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Stop leak if safe to do so. Stop release. Ventilate area.

#### 6.2. Environmental precautions

No additional information available

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### 6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers.
- Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation. Take up liquid spill into inert absorbent material, e.g.: sand/earth. Clean contaminated surfaces with a soap solution.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Do not handle until all safety precautions have been read and understood. Do not breathe vapors. Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Do not get in eyes, on skin, or on clothing. Handle and open the container with care. Keep away from sources of ignition - No smoking. Take precautions against electrostatic charges. Obtain special instructions before use. Remove contaminated clothing immediately.
- Hygiene measures : Wash thoroughly after handling. Wash contaminated clothing before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
- Storage conditions : Keep container tightly closed. Keep only in the original container in a cool, well ventilated place away from: sparks, open flames, excessive heat.
- Incompatible products : Oxidizing agent.
- Incompatible materials : Sources of ignition.
- Storage area : Store away from heat. Store in a cool area. Store in a dry area. Store in a well-ventilated place. Keep locked up.
- Special rules on packaging : Keep only in original container. meet the legal requirements.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

- Personal protective equipment : Use appropriate personal protective equipment when risk assessment indicates this is necessary. Gloves. Protective clothing. Protective goggles. Safety glasses.



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Colorless to yellow brown oily liquid.
- Odor : Hydrocarbon odor
- Odor threshold : No data available
- pH : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : > 210 °F
- Relative evaporation rate (butyl acetate=1) : No data available
- Flammability (solid, gas) : No data available
- Explosion limits : No data available
- Explosive properties : No data available
- Oxidizing properties : No data available

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|                                 |                       |
|---------------------------------|-----------------------|
| Vapor pressure                  | : No data available   |
| Relative density                | : No data available   |
| Relative vapor density at 20 °C | : No data available   |
| Specific gravity / density      | : 0.84 g/ml           |
| Solubility                      | : Insoluble in water. |
| Log Pow                         | : No data available   |
| Log Kow                         | : No data available   |
| Auto-ignition temperature       | : No data available   |
| Decomposition temperature       | : No data available   |
| Viscosity                       | : No data available   |
| Viscosity, kinematic            | : < 20 cSt            |
| Viscosity, dynamic              | : No data available   |
| VOC content                     | : < 3%                |

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, sulphur oxides, carbon monoxide - carbon dioxide). If the product is involved in a fire, it can release toxic chlorine gases. Reacts violently with (strong) oxidizers.

#### 10.2. Chemical stability

Combustible liquid. Stable under normal conditions. Risk of explosion if heated under confinement. Heating may cause a fire or explosion.

#### 10.3. Possibility of hazardous reactions

Refer to section 10.1 on Reactivity.

#### 10.4. Conditions to avoid

Refer to Section 10 on Incompatible Materials. Open flame. Overheating. Sparks.

#### 10.5. Incompatible materials

Oxidizing agents.

#### 10.6. Hazardous decomposition products

Thermal decomposition produces: CO, CO<sub>2</sub>, Oxides of nitrogen and other potentially toxic fumes.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

|  |   |
|--|---|
| <b>2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4)</b>                                   |   |
| LD50 oral rat  | 896 mg/kg (Rat)                               |
| LD50 dermal rabbit   | > 2000 mg/kg (Rabbit)                         |
| LC50 inhalation rat (mg/l)   | > 5.4 mg/l/4h (Rat)                           |
| <b>hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, &lt; 2% aromatics (64742-47-8)</b> |   |
| LD50 dermal rabbit   | > 5000 mg/kg body weight (Rabbit; Literature) |
| <b>Alkanes, C14-16 (90622-46-1)</b>  |   |
| LD50 oral rat  | > 2000 mg/kg                                  |
| LD50 dermal rabbit   | > 2000 mg/kg                                  |
| LC50 inhalation rat (mg/l)   | > 5.8 mg/l/4h                                 |
| <b>Glycol Ether EB (111-76-2)</b>  |   |
| LD50 oral rat  | 1300 mg/kg                                    |
| LD50 dermal rat  | > 2000 mg/kg                                  |
| ATE CLP (oral)   | 1300.000 mg/kg body weight                    |
| ATE CLP (dermal)   | 1100.000 mg/kg body weight                    |
| ATE CLP (dust, mist)   | 1.500 mg/l/4h                                 |

|                                   |                                  |
|-----------------------------------|----------------------------------|
| Skin corrosion/irritation         | : Not classified                 |
| Serious eye damage/irritation     | : Causes serious eye irritation. |
| Respiratory or skin sensitization | : Not classified                 |

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Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

|                                   |                      |
|-----------------------------------|----------------------|
| <b>Glycol Ether EB (111-76-2)</b> |                      |
| 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

|                                   |   |
|-----------------------------------|---|
| <b>Glycol Ether EB (111-76-2)</b> |   |
| LOAEL (oral,rat,90 days)          | 69 mg/kg bodyweight/day Target organ: liver |
| NOAEL (dermal,rat/rabbit,90 days) | 150 mg/kg bodyweight/day                    |

Aspiration hazard : May be fatal if swallowed and enters airways.  
Symptoms/injuries after inhalation : Irritation of the respiratory tract.  
Symptoms/injuries after skin contact : Irritation. Repeated exposure may cause skin dryness or cracking. May cause an allergic skin reaction.  
Symptoms/injuries after eye contact : Causes serious eye irritation.  
Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.

## SECTION 12: Ecological information

### 12.1. Toxicity

|   |   |
|---|---|
| 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) |   |
| LC50 fish 1   | 7.2 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)      |
| EC50 Daphnia 1                                      | 5.2 mg/l (48 h; Daphnia magna; Pure water)                |
| EC50 other aquatic organisms 1                      | > 30 mg/l (120 h; Selenastrum capricornutum; Growth rate) |
| EC50 Daphnia 2                                      | 1.35 mg/l (504 h)   |
| Threshold limit algae 1                             | 15 mg/l (120 h; Selenastrum capricornutum; Growth rate)   |
| Threshold limit algae 2                             | 0.1875 mg/l (120 h; Skeletonema costatum; Cell numbers)   |

|  |                           |
|--|---------------------------|
| hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics (64742-47-8) |                           |
| LC50 fish 1  | > 100 mg/l (Pisces)       |
| EC50 Daphnia 1   | > 100 mg/l (Invertebrata) |
| Threshold limit algae 1  | > 100 mg/l (Algae)        |

|                            |   |
|----------------------------|---|
| Glycol Ether EB (111-76-2) |   |
| LC50 fish 1                | 1474 mg/l Oncorhynchus mykiss             |
| EC50 Daphnia 1             | 100 mg/l Water flea                       |
| ErC50 (algae)              | 1840 mg/l Pseudokirchneriella subcapitata |
| NOEC chronic fish          | > 100 mg/l                                |
| NOEC chronic crustacea     | 100 mg/l daphnid                          |

### 12.2. Persistence and degradability

|  |  |
|--|--|
| hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics (64742-47-8) |  |
| Persistence and degradability  | Readily biodegradable in water. Adsorbs into the soil. |

### 12.3. Bioaccumulative potential

|  |   |
|--|---|
| 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4)                                |   |
| Log Pow  | 5.78 (Experimental value)                         |
| hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics (64742-47-8) |   |
| Log Pow  | 6 - 8.2   |
| Bioaccumulative potential  | High potential for bioaccumulation (Log Kow > 5). |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container to comply with local/regional/national/international regulations.  
Waste disposal recommendations : Dispose of contents/container to comply with local/regional/national regulations.

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### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT : Not regulated for transport

#### Additional information

Other information : No supplementary information available.

#### ADR

No additional information available

#### Transport by sea

No additional information available

#### Air transport

No additional information available

### SECTION 15: Regulatory information

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

|  |                  |           |
|--|------------------|-----------|
| 2-ethylhexyl 2,4-dichlorophenoxyacetate                      | CAS No 1928-43-4 | 0.5 - 1.5 |
| 2-(2-butoxyethoxy)ethanol, diethylene glycol monobutyl ether | CAS No 112-34-5  | 10- 30    |

#### 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4)

Listed on SARA Section 313 (Specific toxic chemical listings)

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labelling 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:

Caution: Harmful if swallowed. Harmful if absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing.

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity

### SECTION 16: Other information

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of H-phrases:

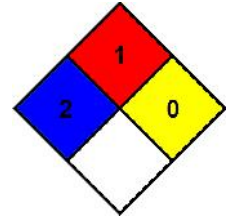
|                     |   |
|---------------------|---|
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4                                  |
| Asp. Tox. 1         | Aspiration hazard Category 1                                      |
| Eye Irrit. 2A       | Serious eye damage/eye irritation Category 2A                     |
| Flam. Liq. 4        | Flammable liquids Category 4                                      |
| Skin Irrit. 2       | Skin corrosion/irritation Category 2                              |
| STOT RE 2           | Specific target organ toxicity (repeated exposure) Category 2     |
| H227                | Combustible liquid  |
| H302                | Harmful if swallowed  |
| H304                | May be fatal if swallowed and enters airways                      |
| H315                | Causes skin irritation  |
| H319                | Causes serious eye irritation                                     |
| H373                | May cause damage to organs through prolonged or repeated exposure |

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NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.  
NFPA fire hazard : 1 - Must be preheated before ignition can occur.  
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



Prepared by: Technical Department

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. No warranty is expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Our company assumes no responsibility for personal injury or property damage to the vendee, users or third parties caused by the material. Such vendees or users assume all risks associated with the use of this material.*