SECTION 1: Product and company identification

Product name	:	Vanquish
Use of the substance/mixture	:	Disinfectant
Product code	:	0175
Company	:	Total Solutions P.O. Box 240014 Milwaukee, WI 53224 - USA T 800-743-6417 athea.com Contact:Technical Department
Emergency number	:	Chemtrec: 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification
Skin Corr. 1B H314

2.2. Label elements

GHS US labelling
Hazard pictograms (GHS US) :

GHS05

Signal word (GHS US)	:	Danger
Hazard statements (GHS US)	:	Causes severe skin burns and eye damage.
Precautionary statements (GHS US)	:	Do not breathe spray. Wash thoroughly after handling Wear eye protection, protective gloves. If swallowed: rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor. Specific treatment (see First aid measures on this label). Wash contaminated clothing before reuse. Store locked up. Dispose of contents/container to comply with local/regional/national/international 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. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Alkyl C12-16 Dimethylbenzyl Ammonium Chloride (Antimicrobial)	(CAS-No.) 68424-85-1	1 – 5	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 STOT RE 2, H373
C12-15 Alcohols Ethoxylated (Surfactant)	(CAS-No.) 68131-39-5	1 - 5	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
Tetrasodium EDTA (Chelating agent)	(CAS-No.) 64-02-8	1 - 5	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 STOT RE 2, H373

Ethanol (Cleansing Agent)	(CAS-No.) 64-17-5	0.5 – 1.5	Flam. Liq. 2, H225 Carc. 1A, H350
Quaternium-24 (Antimicrobial)	(CAS-No.) 32426-11-2	0.5 – 1.5	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314
Didecyldimonium Chloride (Antimicrobial)	(CAS-No.) 7173-51-5	0.5 – 1.5	Acute Tox. 3 (Oral), H301 Skin Corr. 1B, H314
Dimethyldioctylammonium Chloride (Antimicrobial)	(CAS-No.) 5538-94-3	0.5 – 1.5	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314

All hazardous chemicals, as determined by 29 CFR 1910.1200 have been listed. A specific chemical identity and/or percentage of composition has been withheld as a trade secret. Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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 : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist.

First-aid measures after ingestion : Immediately call a POISON CENTER/doctor. Rinse mouth. Do NOT induce vomiting. Drink plenty of water.

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

Symptoms/effects : Causes severe skin burns and eye damage.

Symptoms/effects after inhalation : Corrosive to the respiratory tract.

Symptoms/effects after skin contact : Caustic burns/corrosion of the skin.

Symptoms/effects after eye contact : Causes serious eye irritation. Corrosion of the eye tissue. Permanent eye damage.

Symptoms/effects after ingestion : Burns to the gastric/intestinal mucosa.

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 : All extinguishing media allowed.

5.2. Special hazards arising from the substance or mixture

Reactivity : Upon combustion: CO and CO2 are formed.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water moderately and if possible collect or contain it. Use water spray or fog for cooling exposed containers.

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 : Isolate from fire, if possible, without unnecessary risk.

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Protective goggles. Face shield.

Emergency procedures : Keep upwind.

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

Avoid release to the environment. Prevent soil and water pollution.

6.3. Methods and material for containment and cleaning up

For containment : Contain released product, collect/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.

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 : Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Store in original container.

Incompatible products : Strong acids.

Storage area : Keep only in the original container. Store in a dry area. Store in a cool area.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Alkyl C12-16 Dimethylbenzyl Ammonium Chloride (68424-85-1)
Not applicable

Ethanol (64-17-5)		
ACGIH	ACGIH OEL STEL	1000 ppm
ACGIH	Remark (ACGIH)	TLV® Basis: URT irr. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
OSHA	OSHA PEL TWA	1900 mg/m³
OSHA	OSHA PEL TWA	1000 ppm

Quaternium-24 (32426-11-2)
Not applicable

Didecyldimonium Chloride (7173-51-5)
Not applicable

Dimethyldioctylammonium Chloride (5538-94-3)
Not applicable

C12-15 Alcohols Ethoxylated (68131-39-5)
Not applicable

Tetrasodium EDTA (64-02-8)
Not applicable

8.2. Exposure controls

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Clear, colorless liquid

Odour : Mild odor

Odour threshold : No data available

pH : 12.4

Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	> 200 °F
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Relative vapour density at 20°C	:	No data available
Density	:	1 g/ml
Solubility	:	Soluble in water.
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Partition coefficient n-octanol/water (Log Kow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
VOC content	:	< 1 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Upon combustion: CO and CO2 are formed.

10.2. Chemical stability

No additional information available

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

May be corrosive to metals. Strong acids. metals.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Alkyl C12-16 Dimethylbenzyl Ammonium Chloride (68424-85-1)	
LD50 oral rat	344 mg/kg
LD50 dermal rabbit	3412.5 mg/kg bodyweight Animal: rabbit, Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity)
ATE CLP (oral)	344 mg/kg bodyweight
ATE CLP (dermal)	3340 mg/kg bodyweight

Ethanol (64-17-5)	
LD50 oral rat	10470 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 15800 mg/kg bodyweight (Rabbit, Experimental value, Dermal)
LC50 Inhalation - Rat	124.7 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
ATE CLP (oral)	10470 mg/kg bodyweight

Didecyldimonium Chloride (7173-51-5)	
LD50 oral rat	238 mg/kg Method: OECD Test Guideline 401

LD50 dermal rat	> 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))
LD50 dermal rabbit	≈ 3342 mg/kg bodyweight Animal: rabbit, Guideline: other:, 95% CL: 0 - 4292
ATE CLP (oral)	238 mg/kg bodyweight
ATE CLP (dermal)	3342 mg/kg bodyweight

Dimethyldioctylammonium Chloride (5538-94-3)	
LD50 oral rat	238 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 0,198 - 0,287

C12-15 Alcohols Ethoxylated (68131-39-5)	
LD50 oral rat	5000 – 10000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LD50 dermal rabbit	> 2000 mg/kg
LC50 Inhalation - Rat	> 1.6 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

Tetrasodium EDTA (64-02-8)	
LD50 oral rat	1780 – 2000 mg/kg (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
ATE CLP (oral)	500 mg/kg bodyweight

Skin corrosion/irritation : Causes severe skin burns.
pH: 12.4

Serious eye damage/irritation : Assumed to cause serious eye damage
pH: 12.4

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Ethanol (64-17-5)	
IARC group	1 - Carcinogenic to humans

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Alkyl C12-16 Dimethylbenzyl Ammonium Chloride (68424-85-1)	
NOAEL (subchronic, oral, animal/male, 90 days)	50 mg/kg bodyweight Animal: dog, Animal sex: male, Guideline: OECD Guideline 409 (Repeated Dose 90-Day Oral Toxicity Study in Non-Rodents)
NOAEL (subchronic, oral, animal/female, 90 days)	45 mg/kg bodyweight Animal: dog, Animal sex: female, Guideline: OECD Guideline 409 (Repeated Dose 90-Day Oral Toxicity Study in Non-Rodents)

Ethanol (64-17-5)	
NOAEL (subchronic, oral, animal/male, 90 days)	< 9700 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)
NOAEL (subchronic, oral, animal/female, 90 days)	> 9400 mg/kg bodyweight Animal: mouse, Animal sex: female, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)

C12-15 Alcohols Ethoxylated (68131-39-5)	
NOAEL (oral, rat, 90 days)	≥ 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Tetrasodium EDTA (64-02-8)	
LOAEL (oral, rat, 90 days)	60 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
LOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.015 mg/l air Animal: rat, Animal sex: female, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)
NOAEL (oral, rat, 90 days)	6 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

Aspiration hazard	:	Not classified
Symptoms/effects after inhalation	:	Corrosive to the respiratory tract.
Symptoms/effects after skin contact	:	Caustic burns/corrosion of the skin.
Symptoms/effects after eye contact	:	Causes serious eye irritation. Corrosion of the eye tissue. Permanent eye damage.
Symptoms/effects after ingestion	:	Burns to the gastric/intestinal mucosa.
Likely routes of exposure	:	Skin and eyes contact

SECTION 12: Ecological information

12.1. Toxicity

Alkyl C12-16 Dimethylbenzyl Ammonium Chloride (68424-85-1)	
LC50 - Fish [1]	0.515 mg/l Test organisms (species): Lepomis macrochirus
EC50 - Crustacea [1]	0.016 mg/l Test organisms (species): Daphnia magna

Ethanol (64-17-5)	
LC50 - Fish [1]	15300 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Lethal)
ErC50 algae	275 mg/l Source: ECHA
NOEC (chronic)	9.6 mg/l Test organisms (species): Daphnia magna Duration: '9 d'

Didecyldimonium Chloride (7173-51-5)	
LC50 - Fish [1]	≈ 0.97 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	≈ 0.057 mg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	≈ 0.49 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [2]	≈ 0.029 mg/l Test organisms (species): Daphnia magna
LOEC (chronic)	≈ 0.047 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	≈ 0.021 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

Dimethyldioctylammonium Chloride (5538-94-3)	
LC50 - Fish [1]	0.28 mg/l Test organisms (species): Lepomis macrochirus
EC50 - Crustacea [1]	0.066 mg/l Test organisms (species): Daphnia magna
LOEC (chronic)	0.046 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.027 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

C12-15 Alcohols Ethoxylated (68131-39-5)	
LC50 - Fish [1]	5 – 10 mg/l Fish
EC50 - Crustacea [1]	5 – 10 mg/l Daphnia
EC50 - Other aquatic organisms [1]	0.88 mg/l Test organisms (species): other:
ErC50 algae	10 – 100 mg/l Algae

Tetrasodium EDTA (64-02-8)	
LC50 - Fish [1]	121 mg/l (US EPA, 96 h, Lepomis macrochirus, Static system, Fresh water, Experimental value, Soft water)
EC50 - Crustacea [1]	625 mg/l (DIN 38412-11, 24 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 algae	> 100 mg/l (EU Method C.3, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Weight of evidence, Nominal concentration)
LOEC (chronic)	50 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	≥ 25.7 mg/l Test organisms (species): Duration: '35 d'

12.2. Persistence and degradability

Ethanol (64-17-5)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.8 – 0.967 g O_2/g substance
Chemical oxygen demand (COD)	1.7 g O_2/g substance
ThOD	2.1 g O_2/g substance

Tetrasodium EDTA (64-02-8)	
Persistence and degradability	Not readily biodegradable in water.

Biochemical oxygen demand (BOD)	< 0.002 g O_2/g substance
Chemical oxygen demand (COD)	0.54 – 0.58 g O_2/g substance

12.3. Bioaccumulative potential

Ethanol (64-17-5)	
Partition coefficient n-octanol/water (Log Pow)	-0.35 (Experimental value, Equivalent or similar to OECD 107, 24 °C)
Bioaccumulative potential	Not bioaccumulative.

Tetrasodium EDTA (64-02-8)	
BCF - Fish [1]	1.1 – 1.8 (28 day(s), Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	-13.17 (QSAR, KOWWIN, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

Transport document description (DOT) : UN1903 Disinfectants, liquid, corrosive n.o.s. (Quaternary Ammonium Chloride), 8, II
UN-No.(DOT) : UN1903
Proper Shipping Name (DOT) : Disinfectants, liquid, corrosive n.o.s.
Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
Hazard labels (DOT) : 8 - Corrosive

Packing group (DOT) : II - Medium Danger
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Symbols : G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102) : B2,IB2,T7,TP2
DOT Packaging Exceptions (49 CFR 173.xxx) : 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L
DOT Vessel Stowage Location : B

Additional information

Emergency Response Guide (ERG) Number : 153
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

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

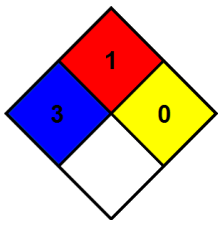
FIFRA Labelling	
EPA Registration Number	6836-140
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.	
FIFRA Signal Word	Danger
FIFRA Human Health Hazards	Corrosive. Causes irreverisble eye damage and skin burns. Do not get in eyes, on skin or on clothing. Wear protective eyewear (goggles, face shield or safety glasses), protective (rubber or chemical resistant) gloves and protective clothing. Harmful if swallowed or absorbed through the skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing before reuse.

California Proposition 65 - This product does not contain substances 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.

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.
NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Prepared by: Technical Department

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