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Section 1 – Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identifier

Product Names: SUPER SEAL PREMIUM™; SUPER SEAL TARGET™

Part Numbers: 946KIT; 941; 941KIT;

1.2 Relevant Identified Uses of the Substance or Mixture and uses Advised Against

Relevant Identified Uses: Automotive A/C lubricant additive. Widespread use by certified automotive technicians

Uses Advised Against: Non-licensed personal

Reason Why Uses Advised Against: Potential exposure hazard with system refrigerant when installing product into A/C

System

1.3 Details of the Supplier of the Safety Data Sheet

Supplier: DiversiTech UK Limited Street/P.O. Box: Glaisdale Dr E Postcode / City: NG8 4LY, Nottingham

Country: United Kingdom **Telephone:** +44 (0)115 900 5858 E-mail: john.lyle@pumph.co.uk

1.4 Emergency Telephone Number

Please contact: 001+1813 248 0585, 24 Hours, 7 Emergency Days, Chem-Tel, Inc

Other Comments (language): English

Section 2 – Hazards Identification

2.1 Classification of the Substance or Mixture

Hazard Classifications

Classification according to Regulation (EC) No. 1272/2008 [CLP]

H225 - Flammable liquids: Category 2

H332 - Acute toxicity (Inhalation): Category 4 H315 - Skin corrosion/irritation: Category 2

H318 - Serious eye damage: Category 1

H317 - Skin Sensitization: Category 1

H335 - Specific Target Organ Toxicity - Single Exposure (respiratory system, central nervous system): Category 3

H373 - Specific Target Organ Toxicity - Repeat Exposure (bladder): Category 2

H412 - Hazardous to the aquatic environment (Chronic 3)

2.2 Label Elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard Pictograms:



Signal Word: Danger

Hazard statements:

H226 - Highly flammable liquid and vapour

H332 - Harmful if inhaled

H315 - Causes skin irritation

H318 - Causes serious eye damage

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H317 - May cause an allergic skin reaction

H335 - May cause respiratory irritation

H336 - May cause drowsiness or dizziness

H373 - May cause damage to organs through repeated or prolonged exposure (bladder)

H412 - Harmful to aquatic life with long lasting effects

Precautionary statements:

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 - Wear protective gloves and eye protection.

P260 - Do not breathe mist, vapour or spray.

P271 - Use only outdoors or in a well-ventilated area.

P264 - Wash hands and exposed skin thoroughly after handling.

P272 - Contaminated work clothing should not be allowed out of the workplace.

P273 - Avoid release to the environment.

P370+P378 - In case of fire: Use carbon dioxide, dry chemical powder, alcohol-resistant foam or water spray to extinguish.

P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P309 + P311 - Call a doctor if you feel unwell.

P303 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Specific treatment: see first aid measures on this label.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately seek medical attention.

P332+P313 - If skin irritation or rash occurs: Get medical attention.

P362+P364 - Take off contaminated clothing and wash it before reuse.

Supplemental Hazard Information (EU): Not Applicable

2.3 Other Hazards

None Applicable

Conditions for safe storage:

Keep away from heat, sparks, and open flame. In the opened canister, this product is sensitive to moisture.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations

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Section 3 – Composition/Information on Ingredients

3.1 Substance

Not applicable.

3.2 Mixture

Description of the mixture:

Automotive A/C additive containing a hydrolytic sealant.

Ingredient Name	Comp, wt%	CAS No.	EC No.	REACH Registration No.	Classification
Trimethoxyvinylsilane	15-40%	2768-02-7	220-449-8	01-2119513215-52-0000	Flam. Liq. 2 H225 Acute Tox. 4 H332
2-methylpropan-1-ol (iso-butyl alcohol)	10-30%	78-83-1	201-148-0	01-2119484609-23	Flam. Liq. 3 H226 Skin Irrit. 2 H315 Eye Dam. 1 H318
N-(3-(trimethoxysilyl)propyl) ethylenediamine	10-30%	1760-24-3	217-164-6	01-2119970215-39-0000	Flam. Liq. 4 H227 Skin Irrit. 2 H315 Eye Dam. 1 H318
Trimethoxymethylsilane	3-7%	1185-55-3	214-685-0	01-2120118455-60-0000	Flam. Liq. 2 H225 Skin Sens. 1 H317

Remaining components are not classified as hazardous under ECHA.

Section 4 – First-Aid Measures

4.1 Description of first aid measures

Inhalation

Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.

Ingestion

Do NOT induce vomiting. Wash out mouth with water provided person is conscious. Obtain medical attention.

Skin Contact

Immediately wash skin with soap and plenty of water. If irritation persists or if contact has been prolonged, obtain medical attention. Take off contaminated clothing and wash it before reuse.

Eye Contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately seek medical attention

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4.2 Most important symptoms and effects, both acute and delayed

These products are expected to react with moisture in the gastrointestinal tract to form methanol. Symptoms may be delayed and include headache, dizziness, nausea, lack of coordination, and confusion.

4.3 Indication of any immediate medical attention and special treatment needed

Get medical treatment immediately.

Section 5 – Fire-Fighting Measures

5.1 Extinguishing media

DO NOT USE WATER STREAM. Use carbon dioxide, dry chemical powder, alcohol-resistant foam or water spray.

5.2 Special hazards arising from the substance or mixture

Vapours from these products may travel or be moved by air currents and ignited by pilot light or other flames and ignition sources at locations distant from product handling point. Burning can produce oxides of carbon, nitrogen and silicon.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective clothing. Do not breathe fumes or vapours.

Section 6 – Accidental Release Measures

6.1.1 Personal precautions, protective equipment and emergency procedures

Protective Equipment:

Wear chemical-resistant gloves and chemical safety goggles. Ensure adequate ventilation. Do not breathe fumes or vapours.

Emergency Procedures:

Clear the area of unnecessary personnel. Shut off all sources of ignition. No smoking.

6.1.2 For emergency responders

Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

6.2 Environmental precautions

Avoid runoff to sewers and waterways.

6.3 Methods and materials for containment and cleaning up

Cover spill with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

6.4 Reference to other sections

Refer to sections 8 and 13

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Section 7 – Handling and Storage

7.1.1 Precautions for safe handling

Measures to prevent fire

Do not smoke, eat or drink when using this product. Ensure adequate ventilation. Use non-sparking equipment.

Avoid static discharge.

Measures to protect the environment

Avoid spills. Avoid runoff to sewers and waterways.

7.1.2 Advice on general occupational hygiene:

- a) Do not eat, drink and smoke in work areas.
- b) Do not breathe vapour.
- c) Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling.
- d) Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep away from heat, sparks, and open flame. In the opened canister, this product is sensitive to moisture.

Packaging materials:

Requirements for storage rooms and vessels:

Store in a well-ventilated place. Keep cool.

7.3 Specific end use

Recommendations:

HVAC and refrigeration lubricant additive

Industrial sector specific solutions:

Compatible with mineral oil, alkyl benzene oil, polyolester oil, polyvinylether oil, polyalkylene glycol oil, and polyalphaolefin oil. Compatible with CFC, HCFC, HFC, and HC refrigerant.

Section 8 – Exposure Controls/Personal Protection

8.1 Control Parameters

COMPONENT	CAS No.	VALUE	CONTROL
			PARAMETERS
2-methylpropan-1-ol	78-83-1	STEL	75 ppm
(iso-butyl alcohol)			231 mg/m3
		TWA	50 ppm
			154 mg/m3

8.2 Exposure Controls

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8.21 Appropriate Engineering Controls

Substance/Mixture Related Measures to Prevent Exposure During Identified Uses:

General room ventilation is expected to be sufficient for use of the product.

Structural Measures to Prevent Exposure:

General room ventilation

Organizational Measures to Prevent Exposure:

Proper HVAC licensing

Technical Measures to Prevent Exposure:

Use protective gloves. Use eye protection and chemical protective clothing. Wash thoroughly after handling. Wash contaminated clothing before reuse.

8.2.2 Personal Protection Equipment

8.2.2.1 Eye and Face Protection:

Chemical safety goggles or safety glasses with side shields.

8.2.2.2 Skin Protection:

Hand Protection:

Chemical resistant gloves

Other Skin Protection:

Wear clothing that covers arms and legs. Wash hands thoroughly after use.

8.2.2.3 Respiratory Protection:

Wear properly fitted NIOSH approved half-mask or air-purifying respirator

8.2.2.4 Thermal Hazards:

Keep away from heat and open ignition sources.

8.2.3 Environmental Exposure Controls

Environmental Exposure Controls

See SECTION 7.1.1: Handling and Storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

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Section 9 – Physical and Chemical Properties

a) Appearance Clear pale yellow liquid

b) Odour Ethereal

c) Odour threshold
d) pH
Not applicable
e) Freezing point
No data available
f) Boiling point
No data available
No data available

g) Flash point 20°C

e) Evaporation rate
f) Flammability or explosive limits
g) Vapour pressure
h) Vapour density
i) Specific Gravity
j) Water Solubility
k) Partition coefficient:
No data available
No data available
No data available
No data available

n-octanol/water

l) Auto-ignition temperature No data available m) Decomposition temperature No data available n) Viscosity No data available

NOTE: The physical data presented above are typical values and should not be construed as specification.

Section 10 – Stability and Reactivity

10.1 Reactivity

Sensitivity with water or moisture. Reacts with water forming an organosilane polymer and methanol.

10.2 Chemical stability

Stable under recommended storage conditions. Keep away from moisture, heat or flame.

10.3 Possibility of hazardous reactions

Unlikely

10.4 Conditions to avoid

Avoid contact with moisture, heat, flames and sparks.

10.5 Incompatible materials

Acids, strong oxidizing agents

10.6 Hazardous decomposition products

Reacts with water or moisture to form methanol. In a fire, carbon monoxide, carbon dioxide and silicon oxides are formed. Does not decompose when used for intended uses.

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Section 11 - Toxicological Information

The toxicological properties of this product have not been investigated. Information for some components is provided below.

11.1 Information on toxicological effects

Acute toxicity

Oral LD50 rat: Trimethoxyvinylsilane: >7000 mg/kg

2-methylpropan-1-ol: >2830 mg/kg

N-(3-(trimethoxysilyl)propyl)ethylenediamine: 8000 mg/kg

Trimethoxy(methyl)silane: 11,685 mg/kg

Inhalation LC50 rat: Trimethoxyvinylsilane: 16.4-17.8 mg/l

4 h 2-methylpropan-1-ol: 24.6 mg/l

N-(3-(trimethoxysilyl)propyl)ethylenediamine: 1.49-2.44 mg/l

Trimethoxy(methyl)silane: >42.1 mg/l

Skin LD50 rabbit: Trimethoxyvinylsilane: 4000 mg/kg

2-methylpropan-1-ol: 4000 mg/kg (male)

3000 mg/kg (female)

N-(3-(trimethoxysilyl)propyl)ethylenediamine: >2000 mg/kg

Skin LD50 rat: 2-methylpropan-1-ol: 2460 mg/kg

Trimethoxy(methyl)silane: >9,500 mg/kg

Skin corrosion/irritation

Skin irritation rabbit: Trimethoxyvinylsilane: no irritation

2-methylpropan-1-ol: no irritation

Trimethoxy(methyl)silane: no irritation

Serious eye damage/irritation

2-methylpropan-1-ol: causes serious eye damage Rabbit:

N-(3-(trimethoxysilyl)propyl)ethylenediamine: corrosive to eyes

Trimethoxy(methyl)silane: no eye irritation

Respiratory or skin sensitization

Guinea pig: Trimethoxyvinylsilane - did not cause sensitization

N-(3-(trimethoxysilyl)propyl)ethylenediamine - may cause sensitization by skin contact

Trimethoxy(methyl)silane – did not cause sensitization

Carcinogenicity

None of the components of this product is identified as a carcinogen by IARC, ACGIH, NTP or OSHA.

Specific target organ toxicity – single exposure

2-methylpropan-1-ol: May cause respiratory irritation. Target organ: Central nervous system. May cause drowsiness or dizziness.

Aspiration hazard

No data available

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Potential Health Effects:

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin Contact: May be harmful if absorbed through skin. Causes mild skin irritation.

Eye Contact: Causes eye irritation. **Ingestion:** May be harmful if swallowed.

Section 12 – Ecological Information

12.1 Toxicity

No data are available for the ecological effects of these products; information on some components is provided below.

The silane components of these products degrade through hydrolysis into alcohols and silanol and/or siloxanol compounds.

These products are not expected to be readily biodegradable.

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Acute Toxicity to fish

LC50 (96-h): 597mg/mortality Dania rerio (Huls 1994)

Acute toxicity to fish

LC50 (96-h): 597mg/mortality Danio rerio, (Huls 1994).

Acute toxicity to aquatic invertebrates

EC50 (48-h): 81mg/L mobility Daphnia magna (Huls 1995).

Acute toxicity to algae/aquatic plants

(72-h) EC50: 8.8 mg/l growth rate Pseudokirchneriella subcapitata, reliability 2 (Springborn Smithers, 2002b).

(72-h) NOEC: 3.1 mg/l growth rate Pseudokirchneriella subcapitata, reliability 2 (Springborn Smithers, 2002b).

Toxicity to bacteria

Toxicity to microorganisms: EC₅₀ of 67 mg/l; EC₁₀ 25 mg/l (*Pseudomonas putida*, growth rate).

Trimethoxyvinylsilane

Acute Toxicity to fish

96-h) LC50: 191mg/L *Oncorhynchus mykiss*. Primarily exposed to the hydrolysis products of the substance. (96-h) NOEC: 100mg/L *Oncorhynchus mykiss*. Primarily exposed to the hydrolysis products of the substance.

Acute toxicity to aquatic invertebrates

(48-g) EC50: 168.7mg/L Daphnia magna. Primarily exposed to the hydrolysis products of the substance.

Acute toxicity to algae/aquatic plants

(72-h) EC50: >89mg/L *Pseudokirchneriella subcapitata* Primarily exposed to the hydrolysis products of the substance (7-day) EC50: 210mg/L *Pseudokirchneriella subcapitata* Primarily exposed to the hydrolysis products of the substance.

(72-h) NOEC: =89mg/L *Pseudokirchneriella subcapitata* Primarily exposed to the hydrolysis products of the substance. (7-day) NOEC: 25mg/L *Pseudokirchneriella subcapitata* Primarily exposed to the hydrolysis products of the substance.

Toxicity to bacteria

(3-h) ASRI EC10: >100mg/L (loading rate) (OECD 209)

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2-methylpropan-1-ol

Acute Toxicity to fish

(96-h) LC50:1.43ml/L Pimephales promelas

12.2 Persistence and degradability

Trimethoxyvinylsilane: Not readily biodegradable (28 d) when tested according to OECD - Guideline 301 F. 2-methylpropan-1-ol: Readily biodegradable; 99 %; 14 d) when tested according to OECD Test Guideline 301A

12.3 Bioaccumulative potential

Not bioaccumulating.

12.4 Mobility in soil

No data available

12.6 Other adverse effects

No data available

12.7 Additional information

No data available

Section 13 – Disposal Considerations

13.1 Waste Treatment Methods

13.1.1 Product / Packaging Disposal

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is flammable. Observe all federal, provincial, and local environmental regulations. Dispose packaging with product.

13.1.2 Waste Treatment-Relevant Information

Place into a suitable marked closed container for disposal as chemical waste.

13.1.3 Sewage Disposal-Relevant Information

Dispose of in accordance with local and national regulations.

13.1.4 Other Disposal Recommendations

Do not expose to waterways.

Section 14 – Transport Information

TDG/IATA/IACO/IMDG

14.1 UN Number

UN #: 1993

14.2 UN Proper Shipping Name

FLAMMABLE LIQUID, N.O.S. (Trimethoxyvinylsilane)

14.3 Transport Hazard Class(es)

Class: 3

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14.4 Packing Group Packing Group: II

14.5 Environmental Hazards

Marnie pollutant according to the International Maritime Dangerous Goods Code (IMDG Code)

14.6 Special Precautions for Use

No additional information is required.

14.7 Transport in Bulk According to ANNEX II of MARPOL and the IBC Code

No additional information is required.

Section 15 – Regulatory Information

15.1 Safety, Health, and Environmental Regulations/Legislations Specific for the Substance or Mixture (EU Regulation)

EU Regulations

Regulation (EC) No. 2037/2000 Substances that deplete the ozone layer: none

Regulation (EC) No. 850/2004 On persistent organic pollutants: none

Regulation (EC) No. 649/2012 Import and export of dangerous chemicals: none

Regulation (EC) No. 1907/2006 REACH Annex XIV Substances subject to authorization, as amended: none

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use: none

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work: none

Directive 92/85/EC on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding: none

Directive 96/82/EC (Seveso III): on the control of major accident hazards involving dangerous substances: none

EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants: none

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work: none

15.2 Chemical Safety Assessment

A chemical safety assessment has not been conducted on this substance.

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Section 16 – Other Information

This version 4.2 (August 7, 2018) has been updated from the previous version 4.1 of May 18, 2018 and conforms to the requirements of REACH.

Full text of other abbreviations

wt% = weight percentage; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Cooperation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; (QSAR) - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SDS - Safety Data Sheet; vPvB - Very Persistent and Very Bioaccumulative; Comp - Composition

All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publications of use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.