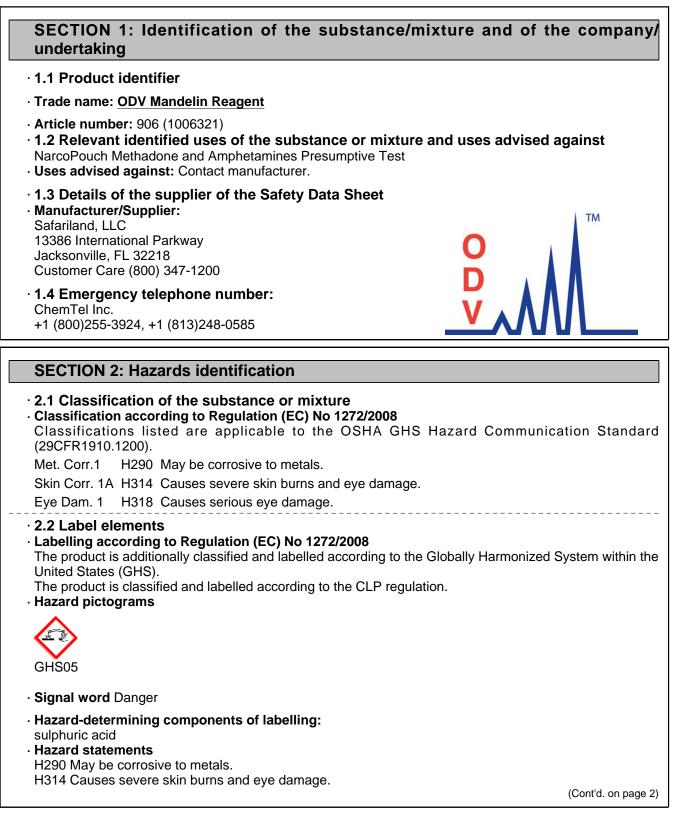
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(Cont'd. from page 1) · Precautionary statements P260 Do not breathe mist. P264 Wash thoroughly after handling. Wear protective gloves / eye protection. P280 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. P310 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Wash contaminated clothing before reuse. P363 P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Absorb spillage to prevent material damage. P390 P405 Store locked up. P406 Store in corrosive resistant container with a resistant inner liner. P501 Dispose of contents/container in accordance with local/regional/national/international regulations. • 2.3 Other hazards There are no other hazards not otherwise classified that have been identified. Results of PBT and vPvB assessment · PBT: Not applicable.

• vPvB: Not applicable.

# **SECTION 3: Composition/information on ingredients**

# · 3.2 Mixtures

· Components:		
CAS: 7664-93-9	sulphuric acid	>80%
EINECS: 231-639-5	Wet. Corr.1, H290; Skin Corr. 1A, H314	
Index number: 016-020-00-8		
CAS: 7803-55-6	ammonium trioxovanadate	0,1-1%
EINECS: 232-261-3	Acute Tox. 3, H301	
	Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	

#### · Additional information:

For the listed ingredient(s), the identity and exact percentages are being withheld as a trade secret. For the wording of the listed Hazard Statements refer to section 16.

# **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

#### · General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

• After inhalation: Supply fresh air; consult doctor in case of complaints.

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 After skin contact: Immediately rinse with water. Seek immediate medical advice. Seek immediate medical help for blistering or open wounds.

After eye contact: Protect unharmed eye. Remove contact lenses if worn. Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing: Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.

- 4.2 Most important symptoms and effects, both acute and delayed Strong caustic effect on skin and mucous membranes.
- · Hazards:

Danger of gastric perforation. Causes serious eye damage.

• 4.3 Indication of any immediate medical attention and special treatment needed Medical supervision for at least 48 hours.

If medical advice is needed, have product container or label at hand.

# **SECTION 5: Firefighting measures**

· 5.1 Extinguishing media

• Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

- · For safety reasons unsuitable extinguishing agents: None.
- 5.2 Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

- · 5.3 Advice for firefighters
- · Protective equipment:

Wear self-contained respiratory protective device.

- Wear fully protective suit.
- Additional information: No further relevant information available.

# **SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.
Ensure adequate ventilation
 6.2 Environmental precautions
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage
system.

• 6.3 Methods and material for containment and cleaning up Use limestone to neutralize and absorb spill.

Dispose contaminated material as waste according to section 13.

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Send for recovery or disposal in suitable receptacles.

# · 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

# **SECTION 7: Handling and storage**

# · 7.1 Precautions for safe handling

Prevent formation of aerosols. Avoid splashes or spray in enclosed areas. Use only in well ventilated areas. Heating occurs when water is added.

· Information about fire - and explosion protection: No special measures required.

# • 7.2 Conditions for safe storage, including any incompatibilities

- · Storage:
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.

Unsuitable material for receptacle: aluminium.

Unsuitable material for receptacle: steel.

• Information about storage in one common storage facility: Store away from foodstuffs.

Store away from flammable substances.

Do not store together with alkalis (caustic solutions).

- Further information about storage conditions: Keep container tightly sealed.
- 7.3 Specific end use(s) No further relevant information available.

# **SECTION 8: Exposure controls/personal protection**

#### · 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

#### 7664-93-9 sulphuric acid

PEL (USA) Long-term value: 1 mg/m<sup>3</sup>

REL (USA) Long-term value: 1 mg/m<sup>3</sup>

- TLV (USA) Long-term value: 0,2\* mg/m<sup>3</sup> \*as thoracic fraction
- IOELV (EU) Long-term value: 0,05 mg/m<sup>3</sup>
- **DNELs:** No further relevant information available.

• **PNECs:** No further relevant information available.

# · 8.2 Exposure controls

• Engineering measures Provide adequate ventilation.

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· Personal protective equipment: · General protective and hygienic measures: The usual precautionary measures are to be adhered to when handling chemicals. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

- Respiratory protection: Not required under normal conditions of use.
- · Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. · Eye protection:

Contact lenses should not be worn.



Safety glasses

- · Body protection: Protective work clothing
- · Limitation and supervision of exposure into the environment:

No further relevant information available.

· 9.1 Information on basic physic	al and chemical properties	
· Appearance		
Form:	Liquid	
Colour:	Yellow	
· Odour:	Characteristic	
· Odour threshold:	Not determined.	
· pH-value at 20 °C (68 °F):	< 1	
• Melting point/Melting range:	Not determined.	
· Boiling point/Boiling range:	100 °C (212 °F)	
· Flash point:	Not applicable.	
· Flammability (solid, gaseous):	Not applicable.	
· Auto/Self-ignition temperature:	Not determined.	
· Decomposition temperature:	Not determined.	
· Self-igniting:	Product is not self-igniting.	
· Danger of explosion:	Product does not present an explosion hazard.	
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· Explosion limits		
Lower:	Not determined.	
Upper:	Not determined.	
<ul> <li>Oxidising properties</li> </ul>	Not determined.	
· Vapour pressure:	Not determined.	
· Density at 20 °C (68 °F):	1,79 g/cm³ (14,938 lbs/gal)	
· Relative density:	Not determined.	
· Vapour density:	Not determined.	
<ul> <li>Evaporation rate:</li> </ul>	Not determined.	
· Solubility in / Miscibility with		
water:	Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/	water): Not determined.	
· Viscosity		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
<ul> <li>9.2 Other information</li> </ul>	No further relevant information available.	

#### **SECTION 10: Stability and reactivity**

• **10.1 Reactivity** No further relevant information available.

- 10.2 Chemical stability Stable under normal temperatures and pressures.
- $\cdot$  Thermal decomposition / conditions to be avoided:
- No decomposition if used and stored according to specifications.
- · 10.3 Possibility of hazardous reactions

Reacts with alkali (lyes). Heating occurs when water is added.

Corrosive action on metals.

Strongly reducing.

Toxic fumes may be released if heated above the decomposition point.

- · 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials No further relevant information available.

# 10.6 Hazardous decomposition products

Sulphur oxides (SOx)

Toxic metal oxide smoke

# **SECTION 11: Toxicological information**

#### · 11.1 Information on toxicological effects

· Acute toxicity: Based on available data, the classification criteria are not met.

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· LD/LC50 values relevant for classification:
7803-55-6 ammonium trioxovanadate
Oral LD50 160 mg/kg (rat)
<ul> <li>Primary irritant effect</li> <li>Skin corrosion/irritation: Causes severe skin burns and eye damage.</li> <li>Serious eye damage/irritation: Causes serious eye damage.</li> <li>Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.</li> </ul>
· Carcinogenic categories
· IARC (International Agency for Research on Cancer):
7664-93-9 sulphuric acid
· NTP (National Toxicology Program):
7664-93-9 sulphuric acid
· OSHA-Ca (Occupational Safety & Health Administration):
None of the ingredients are listed.
<ul> <li>Probable routes of exposure: Ingestion. Inhalation. Eye contact. Skin contact.</li> <li>Acute effects (acute toxicity, irritation and corrosivity): Causes severe skin burns and eye damage Repeated dose toxicity: No further relevant information available.</li> <li>Germ cell mutagenicity: Based on available data, the classification criteria are not met.</li> <li>Carcinogenicity: Based on available data, the classification criteria are not met.</li> <li>Reproductive toxicity: Based on available data, the classification criteria are not met.</li> <li>STOT-single exposure: Based on available data, the classification criteria are not met.</li> <li>STOT-repeated exposure: Based on available data, the classification criteria are not met.</li> <li>Aspiration hazard: Based on available data, the classification criteria are not met.</li> </ul>
SECTION 12: Ecological information
<ul> <li>• 12.1 Toxicity</li> <li>• Aquatic toxicity: No further relevant information available.</li> </ul>

- Aquatic toxicity: No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- 12.3 Bioaccumulative potential No further relevant information available.
- · 12.4 Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Do not allow product to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

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Danger to drinking water if even small quantities leak into the ground. Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. If the dilution of the use-level pH-value is considerably increased after use, the aqueous waste, emptied into drains, is only low water-dangerous.

- 12.5 Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · vPvB: Not applicable.

· 12.6 Other adverse effects No further relevant information available.

# **SECTION 13: Disposal considerations**

#### · 13.1 Waste treatment methods

· Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

#### · Uncleaned packaging:

• Recommendation: Disposal must be made according to official regulations.

14.1 UN-Number		
· DOT, ADR, IMDG, IATA	UN1830	
· 14.2 UN proper shipping name		
· DOT, IATA	Sulfuric acid	
ADR	1830 SULPHURIC ACID	
·IMDG	SULPHURIC ACID	
<ul> <li>14.3 Transport hazard class(es)</li> </ul>		
·DOT		
CENTRONY CENTRONY		
· Class	8 Corrosive substances.	
· Label	8	

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ADR	
Class	8 (C1) Corrosive substances.
Label	8
· IMDG, IATA	
Class	8 Corrosive substances.
Label	8
· 14.4 Packing group	
· DOT, ADR, IMDG, IATA	I
14.5 Environmental hazards:	Not applicable.
14.6 Special precautions for user	Warning: Corrosive substances.
Danger code (Kemler):	80
EMS Number:	F-A,S-B Acids
Segregation groups	
• 14.7 Transport in bulk according to An	
of Marpol and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Limited quantities (LQ)	1L Code: E2
Excepted quantities (EQ)	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per unter packaging: 500 m
Transport category	2
Tunnel restriction code	E
IMDG	
<ul> <li>Excepted quantities (EQ)</li> </ul>	Code: E2
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 m

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**SECTION 15: Regulatory information** 

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<ul> <li>15.1 Safety, health and environmental regulations/legislation specific for mixture</li> <li>United States (USA)</li> <li>SARA</li> </ul>	ior the substance
<ul> <li>Section 355 (extremely hazardous substances):</li> </ul>	
7664-93-9 sulphuric acid	
· Section 313 (Specific toxic chemical listings):	
7664-93-9 sulphuric acid	
· TSCA (Toxic Substances Control Act):	
All ingredients are listed.	
· Proposition 65 (California):	
· Chemicals known to cause cancer:	
None of the ingredients are listed.	
· Chemicals known to cause reproductive toxicity for females:	
None of the ingredients are listed.	
· Chemicals known to cause reproductive toxicity for males:	
None of the ingredients are listed.	
· Chemicals known to cause developmental toxicity:	
None of the ingredients are listed.	
· Carcinogenic Categories	
· EPA (Environmental Protection Agency)	
None of the ingredients are listed.	
<ul> <li>IARC (International Agency for Research on Cancer)</li> </ul>	
None of the ingredients are listed.	
<ul> <li>NIOSH-Ca (National Institute for Occupational Safety and Health)</li> </ul>	
None of the ingredients are listed.	
· Canada	
Canadian Domestic Substances List (DSL)	
All ingredients are listed.	
· Canadian Ingredient Disclosure list (limit 0,1%)	
None of the ingredients are listed.	
Canadian Ingredient Disclosure list (limit 1%)	
7664-93-9 sulphuric acid	
• Directive 2012/18/EU	
<ul> <li>Named dangerous substances - ANNEX I None of the ingredients are listed.</li> </ul>	(Cont'd on page 1

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#### · Other regulations, limitations and prohibitive regulations

· Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

#### **SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · Relevant phrases

H290 May be corrosive to metals.
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
Abbreviations and acronyms:
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transport Association
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

Met. Corr.1: Corrosive to metals, Hazard Category 1

Acute Tox. 3: Acute toxicity, Hazard Category 3

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

Sources

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Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/ overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: ISBN: 978-0-470-07488-6
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.
Safety Data Sheets, Individual Manufacturers
SDS Prepared by:
ChemTel Inc.
1305 North Florida Avenue
Tampa, Florida USA 33602-2902
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtelinc.com