SAFETY DATA SHEET



Version 1

1. Identification of the Substance / Preparation and of the Company / Undertaking

Product Name: Synonyms: Formula: Molecular Weight: Novel Wash Ammonia Novel Wash Sudsy Ammonia; Novel Wash Clear Ammonia; Novel Wash Lemon Ammonia NH₃ 17

Company Name:

Novel Wash Company 11685 Manchester Road St. Louis, MO 63131 (314) 471-0555

Emergency Telephone:

NATIONAL EMERGENCY RESPONSE CENTER: 1-800-424-8802 Novel Wash Company (314) 471 - 0555 CHEMTREC (US): 1-800-424-9300 Call CHEMTREC only in the event of chemical emergencies involving a SPILL, LEAK, FIRE, EXPOSURE, or ACCIDENT involving chemicals.

2. Hazards Identification

GHS - Classification

| Acute toxicity - Inhalation (Dusts/Mists) | Category 2 |
|--|-------------|
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/eye irritation | Category 1 |
| Respiratory sensitization | Category 1A |
| Germ Cell Mutagenicity: | Category 2 |
| Specific target organ toxicity (single exposure) | Category 1 |
| Chronic aquatic toxicity | Category 3 |



Hazard Statements:

- · Fatal if inhaled
- · Causes severe skin burns and eye damage
- · May cause allergy or asthma symptoms or breathing difficulties if inhaled
- Suspected of causing genetic defects
- · Causes damage to organs
- Harmful to aquatic life with long lasting effects
- Physical Hazards
- None

Precautionary Statements:

- · P271 Use only outdoors or in a well-ventilated area
- P284 Wear respiratory protection
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed
- P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting

• P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

- · P363 Wash contaminated clothing before reuse
- P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P280 Wear protective gloves/protective clothing/eye protection/face protection

• 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 call a POISON CENTER or doctor/physician
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- · P285 In case of inadequate ventilation wear respiratory protection

• P304 + P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

- P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
- P201 Obtain special instructions before use
- · P202 Do not handle until all safety precautions have been read and understood
- P281 Use personal protective equipment as required
- P308 + P313 IF exposed or concerned: Get medical advice/attention
- · P260 Do not breathe dust/fume/gas/mist/vapors/spray
- · P264 Wash face, hands and any exposed skin thoroughly after handling
- · P270 Do not eat, drink or smoke when using this product
- P307 + P311 IF exposed: Call a POISON CENTER or doctor/physician
- P405 Store locked up
- P273 Avoid release to the environment
- · P501 Dispose of contents/ container to an approved waste disposal plant

3. Composition / Information on Ingredients

Hazardous

| nala avao | | | |
|-------------------|-----------|----------|-----------|
| Chemical Name | CAS No | Weight-% | EC No |
| Ammoniac, anhydre | 7664-41-7 | 2 | 231-635-3 |
| Non-Hazardous | | | |
| Chemical Name | CAS No | Weight-% | EC No |
| Water | 7732-18-5 | Balance | 231-791-2 |
| Fragrance | - | < 0.18 | - |

| 4. First Aid Measures | |
|-----------------------|---|
| General Advice: | Immediate medical attention is required. |
| Eye Contact: | Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. |
| Skin Contact: | Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |

| Inhalation: | Move to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. |
|-------------------------------------|---|
| Ingestion: | Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately. |
| Note to Physicians: | Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically. |
| Self-protection of the First Aider: | Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. |

5. Fire-fighting Measures

Flammable Properties:

May cause fire

Explosive Properties:

No information available

Suitable Extinguishing Media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Unsuitable Extinguishing Media:

No information available

Specific Hazards Arising from the Chemical:

The product causes burns of eyes, skin and mucous membranes; Thermal decomposition can lead to release of irritating and toxic gases and vapors; In the event of fire and/or explosion do not breathe fumes

Protective Equipment and Precautions for Firefighters:

In the event of a fire, wear full protective clothing and MSHA/NIOSH (approved or equivalent) self-contained breathing apparatus with full facepiece operated in the pressure-demand or other positive pressure mode

| 6. Accidental Release Measure | 25 |
|-------------------------------|---|
| Personal Precautions: | Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak. |
| Environmental Precautions: | Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. |
| Methods for Cleaning Up: | Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water. |
| Other Information: | Not applicable. |
| 7. Handling and Storage | |
| Advice on Safe Handling: | Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. |

Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

appropriate, to prevent skin contact. Wear chemical resistant clothing such as gloves,

apron, boots or whole bodysuits made from neoprene, as appropriate.

Incompatible Materials: Strong acids and bases; Oxidizing agents

8. Exposure Controls / Personal Protection

| Chemical Na | me | ACGIH TLV | | | OSHA PEL | | Ont | ario TWA |
|-------------------------------------|--|--|---------------|-------|--|--|------------------------------------|--|
| Ammoniac, anh | nhydre STEL: 35 ppm | | 27 mg/m³ STEL | | TWA: 25 ppm | | | |
| | | TWA: 25 ppm | ו | | 35 ppm STEL 35 mg/m ³ TWA | | STE | L: 35 ppm |
| Chemical Name | European Unio | n China | Jap | an | 50 ppm TWA | | Australia | Taiwan |
| | | TWA: 20 mg/m ³ | TWA: 2 | | STEL: 35 ppm | | | TWA: 50 ppm |
| Ammoniac, anhydre | TWA 20 ppm TWA 14 mg/m ³ | 0 | TWA: 2 | | STEL: 35 ppm STEL: 27 mg/m ³ | | 25 ppm 17 mg/m ³ | TWA: 30 ppm TWA: 35 mg/m ³ |
| | STEL 50 ppm | | 1 VVA. 17 | mg/m° | TWA: 25 ppm | | 0 | TWA. 55 mg/m |
| | | | | | | | ppm STEL mg/m ³ STEL | |
| | STEL 36 mg/m ³ | | L | | TWA: 18 mg/m ³ | | <u> </u> | |
| Exposure Guidelines | Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 | | | | | | | |
| | (* | (11th Cir., 1992) | | | | | | |
| Engineering Controls: | Ensure adequate ventilation, especially in confined areas | | | | | | | |
| | | | · · · · · , · | | , | | | |
| Personal protective equipment (PPE) | | | | | | | | |
| Eye/Face Protection | n: T | Tight sealing safety goggles. Face protection shield. | | | | | | |
| Body Protection: | G | Gloves made of plastic or rubber. Rubber boots. Suitable protective clothing. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as | | | | | | |

General Hygiene Considerations:

When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

| Physical State: | Liquid | | |
|-------------------------------|-------------------------|--------------------------|--------------------------|
| Appearance: | Clear to slightly hazy | Odor: | Ammonia |
| Color: | Clear Cloudy or Colored | Odor Threshold: | No information available |
| Description | Malua | Demonster Mathead | |
| Property | Values | Remarks • Method | |
| pH: | 11.8 | | |
| "Salt Out" Point (°F): | | No information available | |
| Melting Point/Freezing Point: | -2 °C / 28 °F | | |
| Boiling Point/Boiling Range: | 100 °C / 212 °F | | |
| Flash Point: | | No information available | |
| Evaporation Rate (BuAc=1): | > 1 | | |
| Flammability (solid, gas): | | No information available | |
| Flammability Limits in Air: | | No information available | |
| Upper Flammability Limit: | 27% | | |
| Lower Flammability Limit: | 16% | | |
| Vapor Pressure (mm Hg) : | | No information available | |
| Vapor density (Air =1) | | No information available | |
| Specific Gravity (H2O=1): | 0.989 | | |
| Specific Gravity (2nd value): | | | |
| Water Solubility: | 100% soluble in water | | |
| Solubility(ies): | | No information available | |
| | | | |

| Partition Coefficient (n-octanol/water) Autoignition Temperature: | No information available No information available |
|---|--|
| Decomposition Temperature: | No information available |
| Kinematic Viscosity: | No information available |
| Dynamic Viscosity: | No information available |
| Oxidizing Properties: | No information available |
| Explosive Properties: | No information available |
| 9.2. Other information Softening Point: Molecular Weight: VOC Content(%): Density: Bulk Density: | No information available 17 No information available No information available No information available |
| 10. Stability and Reactivity | |
| Stability: | Stable under normal conditions of use and storage |
| Conditions to Avoid: | Exposure to air or moisture over prolonged periods |

| Incompatible Materials: | Strong acids and bases; Oxidizing agents |
|-------------------------|--|
| Hazardous Decomposition | Nitrogen oxides (NOx); Ammonia |

Products:

Possibility of Hazardous Reactions: None under normal processing

| 11. Toxicological Information | |
|-------------------------------|--|
| | |

Product Information

Acute Toxicity: 0.18% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document

| Chemical Name | Oral LD50 : | Dermal LD50 : | LC50 (Lethal Concentration): |
|-------------------|-----------------|---------------|-------------------------------|
| Ammoniac, anhydre | 350 mg/kg (Rat) | | 2000 ppm (Rat) 4 h 5.1 mg/L (|
| Water | 90 mL/kg (Rat) | | Rat)1 h |

Chronic Toxicity:

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP

Target Organ Effects: Eyes, Respiratory system, Skin

12. Ecological Information

Ecotoxicity

0.18% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Harmful to aquatic life with long lasting effects

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to daphnia and other aquatic invertebrates |
|-------------------|-------------------|--|--|
| Ammoniac, anhydre | | 0.44: 96 h Cyprinus carpio mg/L LC50 0.26 - 4.6: 96 h Lepomis macrochirus mg/L LC50 0.73 - 2.35: 96 h Pimephales promelas mg/L LC50 5.9: 96 h Pimephales promelas mg/L LC50 static 1.5: 96 h Poecilia reticulata mg/L LC50 1.19: 96 h Poecilia reticulata mg/L LC50 static 1.17: 96 h Lepomis macrochirus mg/L LC50 flow-through | |

Persistence and Degradability:

No information available.

Bioaccumulation:

Mobility:

No information available. No information available.

| Chemical Name | Partition Coefficient: | | |
|-------------------|------------------------|--|--|
| Ammoniac, anhydre | -1.14 | | |

13. Disposal Considerations Waste from Residues/Unused Products: Disposal should be in accordance with applicable regional, national and local laws and regulations Contaminated Packaging: Do not reuse container. 14. Transport Information IATA DOT Description Not DOT Regulated TDG MEX_

15. Regulatory Information

International Inventories

All of the components in the product are on the following Inventory lists: No information available, This product contains a substance not listed on international inventories - it is for research and development use only.

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| Chemical Name | AICS | TSCA | DSL | NDSL | EINECS | ELINCS | ENCS | IECSC | KECL | PICCS |
|-------------------|--------|--------|--------|------|--------|--------|---------|--------|----------|---------|
| Ammoniac, anhydre | Listed | Listed | Listed | - | Listed | - | (1)-391 | Listed | KE-01625 | Present |
| | | | | | | | (1)-314 | | | |
| Water | Listed | Listed | Listed | - | Listed | - | - | Listed | KE-35400 | Present |

Inventory Legend

AICS - Australian Inventory of Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

RESTRICTIONS - REACH TITLE VII No information available

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

| Chemical Name | CERCLA Hazardous Substances | SARA Extremely Hazardous | SARA Extremely Hazardous |
|-------------------|-------------------------------|--------------------------|--------------------------|
| | and the Reportable Quantities | Substances EPCRA RQ | Substances TPQ |
| Ammoniac, anhydre | 100 lb 45.4 kg | 100 lb EPCRA RQ | 500 lb TPQ |

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical Name | SARA 313 - Threshold Values % |
|-------------------|-------------------------------|
| Ammoniac, anhydre | 1.0 |

SARA 311/312 Hazard Categories

| Acute health hazard | Yes |
|-----------------------------------|-----|
| Chronic health hazard | No |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive hazard | No |

U.S. State Right-to-Know Regulations

California Proposition 65:

This product does not contain any Proposition 65 chemicals

16. Other Information

National Fire Protection Association (NFPA) Ratings



| Prepared By: | Adam Peterson, Rob Kelley, Andrew Morabu and Todd Bain from the HSE department. |
|----------------|---|
| Issue Date: | 08-Jan-2013 |
| Revision Date: | 08-Jan-2013 |
| Revision Note: | MSDS converted to GHS SDS Format. |

Disclaimer:

Novel Wash Company ("Novel Wash") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein.

All information appearing herein is based upon data obtained from the maufacturer and/or recognized techical sources. While the information is believed to be accurate, Novel Wash makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Novel Wash's control, and, therefore, users are responsible to verify this 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, or from the publication or 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 in any other process.

End of Safety Data Sheet