### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name**: DUALSOLV AEROSOL SAMPLE, NAC MM  
**Recommended use**: Cleaning agent  
**Chemical Code**: 5088  
**Information on Manufacturer**:  
CERTIFIED LABS, DIV. OF NCH CORP.  
BOX 152170  
IRVING, TEXAS 75015

**Issuing Date**: 02/26/2016  
**Supercedes Date**: 06/03/2013

### 2. HAZARD IDENTIFICATION

**Color**: Colorless  
**Physical state**: Liquid  
**Odor**: Sweet

**GHS Classification**

- **Physical Hazards**: Compressed Gas
- **Health Hazard**:  
  - Aspiration Toxicity: Category 1  
  - Skin Corrosion/Irritation: Category 2  
  - Serious Eye Damage/Eye Irritation: Category 2B  
  - Reproductive Toxicity: Category 1B  
  - Carcinogenicity: Category 2  
  - Specific target organ systemic toxicity (single exposure): Category 3  
  - Specific target organ toxicity (repeated exposure): Category 2

**Other hazards**: None

**Labeling**

- **Signal Word**: DANGER

<table>
<thead>
<tr>
<th>Hazard statements</th>
<th>Precautionary Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>H336 - May cause drowsiness or dizziness</td>
<td>P202 - Do not handle until all safety precautions have been read and understood</td>
</tr>
<tr>
<td>H315 - Causes skin irritation</td>
<td>P251 - Pressurized container: Do not pierce or burn, even after use</td>
</tr>
<tr>
<td>H319 - Causes serious eye irritation</td>
<td>P210 - Keep away from heat, sparks, open flames or hot surfaces.</td>
</tr>
<tr>
<td>H304 - May be fatal if swallowed and enters airways</td>
<td>P260 - Do not breathe vapor, mist or gas</td>
</tr>
<tr>
<td>H373 - May cause damage to organs through prolonged or repeated exposure</td>
<td>P271 - Use in a well-ventilated area.</td>
</tr>
<tr>
<td>H360 - May damage fertility or the unborn child</td>
<td>P270 - Do not eat, drink or smoke when using this product.</td>
</tr>
<tr>
<td>H351 - Suspected of causing cancer</td>
<td>P280 - Wear protective gloves, protective clothing and eye protection.</td>
</tr>
<tr>
<td>H280 - Contains gas under pressure; may explode if heated</td>
<td>P264 - Wash face, hands and any exposed skin thoroughly after handling</td>
</tr>
<tr>
<td></td>
<td>P304 + P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.</td>
</tr>
<tr>
<td></td>
<td>P312 - Call a physician if unwell.</td>
</tr>
<tr>
<td></td>
<td>P302 + P352 - IF ON SKIN: Wash with plenty of soap and water</td>
</tr>
<tr>
<td></td>
<td>P332 + P313 - IF skin irritation occurs, get medical attention.</td>
</tr>
<tr>
<td></td>
<td>P362 - Take off contaminated clothing and wash before reuse</td>
</tr>
<tr>
<td></td>
<td>P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
</tr>
<tr>
<td></td>
<td>P337 + P313 - IF eye irritation persists, get medical attention.</td>
</tr>
<tr>
<td></td>
<td>P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Call a physician if unwell.</td>
</tr>
<tr>
<td></td>
<td>P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F</td>
</tr>
<tr>
<td></td>
<td>P403 + P235 - Store in a well-ventilated place. Keep cool.</td>
</tr>
<tr>
<td></td>
<td>P501 - Dispose of contents and container in accordance with applicable local regulations.</td>
</tr>
</tbody>
</table>
4% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Weight % *</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl bromide</td>
<td>106-94-5</td>
<td>60-100</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>124-38-9</td>
<td>1-5</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>67-63-0</td>
<td>1-5</td>
</tr>
<tr>
<td>tert-Butyl alcohol</td>
<td>75-65-0</td>
<td>1-5</td>
</tr>
<tr>
<td>1,2-Butylene oxide</td>
<td>106-88-7</td>
<td>0.1-1</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

General advice
Avoid breathing vapors, mist, or gas. Avoid contact with skin, eyes and clothing.

Eye Contact
Rinse thoroughly with plenty of water, also under the eyelids. Get medical attention if irritation develops and persists.

Skin Contact
Wash off with soap and plenty of water. Get medical attention if irritation develops and persists.

Inhalation
If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Ingestion
Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person.

Notes to physician
Aspiration hazard if swallowed - can enter lungs and cause damage. May be fatal if swallowed and enters airways.

5. FIRE-FIGHTING MEASURES

Flash Point
> 201 °F / > 94 °C

Flammability Limits in Air %: Mixture.
Upper: 12.7
Lower: 2.0

Suitable Extinguishing Media
Water spray, Carbon dioxide (CO2). Foam. Dry chemical. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical
Flame extension: 0 inches / 0 cm and Burnback: 0 inch / 0 cm. Material can create slippery conditions.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, NOHSC (approved or equivalent) and full protective gear.

Aerosol Level (NFPA 30B)
1

NFPA
Health 2
Flammability 1
Instability 0

HMIS
Health 2
Flammability 1
Instability 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment. Prevent further leakage or spillage if safe to do so. Material can create slippery conditions.

Environmental Precautions
Do not flush into surface water or sanitary sewer system.

Methods for Containment
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Methods for Cleaning Up
Pick up and transfer to properly labeled containers.

Neutralizing Agent
Not applicable.

7. HANDLING AND STORAGE

Handling
Keep away from open flames, hot surfaces and sources of ignition. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing.

Storage
Keep away from heat and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place.

Storage Temperature
Minimum 35 °F / 2 °C
Maximum 120 °F / 49 °C

Storage Conditions
Indoor X Outdoor Heated Refrigerated

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl bromide</td>
<td>TWA: 0.1 ppm</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>TWA: 5000 ppm</td>
<td>TWA: 5000 ppm</td>
<td>40000 ppm</td>
</tr>
</tbody>
</table>
Isopropyl alcohol

<table>
<thead>
<tr>
<th></th>
<th>STEL: 30000 ppm</th>
<th>TWA: 9000 mg/m³</th>
<th>STEL 30000 ppm</th>
<th>TWA: 5000 pp/m³</th>
<th>TWA: 9000 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA: 200 ppm</td>
<td>TWA: 400 ppm</td>
<td>2000 ppm</td>
<td>STEL 500 ppm</td>
<td>TWA: 400 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL: 400 ppm</td>
<td>TWA: 980 mg/m³</td>
<td>STEL 125 mg/m³</td>
<td>TWA: 80 mg/m³</td>
<td>TWA: 980 mg/m³</td>
</tr>
</tbody>
</table>

### Engineering Measures
Ensure adequate ventilation, especially in confined areas. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

### Personal Protective Equipment

- **Eye/Face Protection**: Safety glasses with side-shields.
- **Skin Protection**: For prolonged or repeated contact, use protective gloves with appropriate chemical resistance.
- **Respiratory Protection**: In case of inadequate ventilation wear respiratory protection. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

### General Hygiene Considerations
Ensure that eyewash stations and safety showers are close to the workstation location. Remove and wash contaminated clothing before re-use.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>94.3 (Butyl acetate=1)</td>
</tr>
<tr>
<td>VOC Content (%)</td>
<td>95.8</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>4.153.6 mmHg @ 70°F</td>
</tr>
<tr>
<td>Solubility</td>
<td>Negligible</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>160 °F / 71 °C</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt; 201 °F / &gt; 94 °C</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limits in Air %</td>
<td>Mixture</td>
</tr>
<tr>
<td>Upper</td>
<td>12.7</td>
</tr>
<tr>
<td>Lower</td>
<td>2.0</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

- **Chemical Stability**: Stable. Hazardous polymerization does not occur.
- **Conditions to Avoid**: Keep away from open flames, hot surfaces, and sources of ignition.
- **Incompatible Products**: Strong oxidizing agents, Strong bases.
- **Decomposition Temperature**: No data available
- **Hazardous Decomposition Products**: Carbon oxides, Hydrogen bromide.
- **Possibility of Hazardous Reactions**: None under normal processing.

### 11. TOXICOLOGICAL INFORMATION

#### Product Information
No information available.

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

- **Oral LD50**: > 2000
- **Dermal LD50**: No information available
- **Inhalation LC50**: Gas No information available, Mist No information available, Vapor >10

#### Principle Route of Exposure
Skin contact, Eye contact, Inhalation.

#### Primary Routes of Entry
Skin Absorption, Skin contact.

#### Acute Effects:
- **Eyes**: May cause eye irritation.
- **Skin**: May cause skin irritation. May be absorbed through the skin in harmful amounts.
- **Inhalation**: May cause irritation of respiratory tract. Inhalation may cause central nervous system effects. May cause central nervous system depression. Symptoms and signs include headache, dizziness,
fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Lowered blood pressure.

**Ingestion**

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination. Aspiration hazard if swallowed - can enter lungs and cause damage. May be fatal if swallowed and enters airways.

**Chronic Toxicity**

Liver and kidney injuries may occur. Prolonged or repeated ingestion may cause damage to the lungs. Prolonged skin contact may defat the skin and produce dermatitis. Contains a known or suspected reproductive toxin. Contains a known or suspected carcinogen.

**Target Organ Effects**

Respiratory system, Central nervous system, Cardiovascular system, Peripheral Nervous System (PNS), Reproductive System, Liver, Kidney, Heart, Skin, Eyes.

Skin disorders, Liver disorders, Kidney disorders, Neurological disorders, Respiratory disorders, Heart disease.

**Aggravated Medical Conditions**

Respiratory system, Central nervous system, Cardiovascular system, Peripheral Nervous System (PNS), Reproductive System, Liver, Kidney, Heart, Skin, Eyes.

Skin disorders, Liver disorders, Kidney disorders, Neurological disorders, Respiratory disorders, Heart disease.

**Component Information**

**Acute Toxicity**

<table>
<thead>
<tr>
<th>Component</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
<th>Draize Test</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl bromide 106-94-5</td>
<td>no data available</td>
<td>no data available</td>
<td>253 g/m³ (Rat) 30 min</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>Isopropyl alcohol 67-63-0</td>
<td>1870 mg/kg (Rat)</td>
<td>4059 mg/kg (Rabbit)</td>
<td>72600 mg/m³ (Rat) 4 h</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>tert-Butyl alcohol 75-65-0</td>
<td>2200 mg/kg (Rat)</td>
<td>&gt; 2 g/kg (Rabbit) 4 h</td>
<td>&gt; 10000 ppm (Rat) 4 h</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>1,2-Butylene oxide 106-88-7</td>
<td>no data available</td>
<td>= 1757 mg/kg (Rabbit)</td>
<td>&gt; 6300 mg/m³ (Rat) 4 h</td>
<td>no data available</td>
<td>no data available</td>
</tr>
</tbody>
</table>

**Component**

**Mutagenicity**

<table>
<thead>
<tr>
<th>Component</th>
<th>Mutagenicity</th>
<th>Sensitization</th>
<th>Developmental Toxicity</th>
<th>Reproductive Toxicity</th>
<th>Target Organ Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl bromide 106-94-5</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>X</td>
<td>Central nervous system Heart Liver Kidney Respiratory System Reproductive System Peripheral Nervous System (PNS)</td>
</tr>
<tr>
<td>Carbon dioxide 124-38-9</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>Respiratory system Cardiovascular system</td>
</tr>
<tr>
<td>isopropyl alcohol 67-63-0</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>Skin Eyes Respiratory system</td>
</tr>
<tr>
<td>tert-Butyl alcohol 75-65-0</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
<td>Skin Central nervous system Eyes Respiratory system</td>
</tr>
</tbody>
</table>

**Carcinogenicity**

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl bromide 106-94-5</td>
<td>A3</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
<td>not applicable</td>
</tr>
<tr>
<td>1,2-Butylene oxide 106-88-7</td>
<td>not applicable</td>
<td>Group 2B</td>
<td>not applicable</td>
<td>X</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

**12. ECOLOGICAL INFORMATION**

**Product Information**

No information available.

**Component Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Microtox</th>
<th>Crustacea</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl bromide</td>
<td>No information available</td>
<td>LC50 = 67.3 mg/L Pimephales promelas 96 h</td>
<td>No information available</td>
<td>No information available</td>
<td>2.1</td>
</tr>
<tr>
<td>isopropyl alcohol</td>
<td>EC50 &gt; 1000 mg/L Desmodesmus subspicatus 96 h</td>
<td>LC50 = 9640 mg/L Pimephales promelas 96 h</td>
<td>EC50 = 35390 mg/L 5 min</td>
<td>13299: 48 h Daphnia magna mg/L EC50</td>
<td>0.05</td>
</tr>
<tr>
<td>tert-Butyl alcohol</td>
<td>EC50 &gt; 1000 mg/L Desmodesmus subspicatus 72 h</td>
<td>LC50 6130 - 6700 mg/L Pimephales promelas 96 h</td>
<td>EC50 &gt; 10000 mg/L 17 h</td>
<td>933: 48 h Daphnia magna mg/L EC50</td>
<td>0.35</td>
</tr>
<tr>
<td>1,2-Butylene oxide</td>
<td>EC50 &gt; 500 mg/L Desmodesmus subspicatus 72 h</td>
<td>No information available</td>
<td>EC50 = 4840 mg/L 17 h</td>
<td>69.8: 48 h Daphnia magna mg/L EC50</td>
<td>0.416</td>
</tr>
</tbody>
</table>

**Persistence and Degradability**

No information available.

**Bioaccumulation**

No information available.

**Mobility**

No information available.
13. DISPOSAL CONSIDERATIONS

Product Disposal
Dispos of in accordance with local regulations.

Container Disposal
Contents under pressure. Do not puncture. Empty remaining contents. Empty containers should be taken for local recycling, recovery, or waste disposal.

14. TRANSPORT INFORMATION

DOT
Proper Shipping Name  DOT
Hazard Class  Consumer commodity
Description  ORM-D

TDG
Proper shipping name  Aerosols, Non Flammable
Hazard Class  2.2
UN-No  UN1950
Description  UN1950, Aerosols, Non-Flammable, 2.2, LTD QTY

ICAO
UN-No  UN1950
Proper Shipping Name  Aerosols, Non-Flammable
Hazard Class  2.2
Shipping Description  UN1950, Aerosols, Non-Flammable, 2.2, LTD QTY

IATA
UN-No  UN1950
Proper Shipping Name  Aerosols, Non-Flammable
Hazard Class  2.2
Shipping Description  UN1950, Aerosols, Non-Flammable, 2.2, LTD QTY

IMDG/IMO
Proper Shipping Name  Aerosols, Non-Flammable
Hazard Class  2.2
UN-No  UN1950
Description  UN1950, Aerosols, Non-Flammable, 2.2, LTD QTY

15. REGULATORY INFORMATION

Inventories
TSCA  Complies
DSL  Complies
U.S. Federal Regulations

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:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>tert-Butyl alcohol</td>
<td>75-65-0</td>
<td>1-5</td>
<td>1.0</td>
</tr>
<tr>
<td>1,2-Butylene oxide</td>
<td>106-88-7</td>
<td>0.1-0.5</td>
<td>0.1</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Categorization

<table>
<thead>
<tr>
<th>Acute Health Hazard</th>
<th>Chronic Health Hazard</th>
<th>Fire Hazard</th>
<th>Sudden Release of Pressure Hazard</th>
<th>Reactive Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

CERCLA

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Butylene oxide</td>
<td>100 lb</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Prepared By  Rachael Mohochi
Supercedes Date  06/03/2013
Issuing Date  02/26/2016
Reason for Revision  No information available.
Glossary  No information available.
List of References.  No information available.

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