

**MATERIAL  
SAFETY  
DATA  
SHEET**

NFPA Designation 704

DEGREE OF HAZARD  
4 = EXTREME  
3 = HIGH  
2 = MODERATE  
1 = SLIGHT  
0 = INSIGNIFICANT

|                       |               |
|-----------------------|---------------|
| <b>FLAMMABILITY</b>   |               |
| <b>HEALTH</b>         | <b>2</b>      |
| <b>REACTIVITY</b>     |               |
| <b>SPECIAL HAZARD</b> | <b>OX/COR</b> |

# FORMULA 4112

Aqualine Water Treatment Products, Inc.  
2371 Farrington Point Drive  
Winston-Salem, NC 27107

24 Hour Emergency Phone  
CHEMTEL: 800-255-3924

Revised: 09/2008

## SECTION I - IDENTIFICATION

**TRADE NAME:** AQUALINE FORMULA 4112  
**CHEMICAL NAME:** Sodium Hypochlorite  
**FORMULA:** NaOCl  
**DOT SHIPPING NAME:** Hypochlorite Solution  
**DOT HAZARD CLASS:** 8  
**UN/NA NUMBER:** UN 1791  
**DOT LABEL:** Corrosive  
**DOT PLACARD:** Corrosive  
**PACKING GROUP:** III  
**REPORTABLE QUANTITY:** Sodium Hypochlorite: 100 Pounds/45.4 Kilograms  
**CAS NUMBER:** 7681-52-9  
**NFPA DESIGNATION:** The NFPA has not rated sodium hypochlorite.

## SECTION II - HAZARDOUS INGREDIENTS

| MATERIAL            | % BY WEIGHT | CAS NO.        | OSHA PEL                   | ACGIH TLV                                  |
|---------------------|-------------|----------------|----------------------------|--|
| Sodium Hypochlorite | 12.5-15.6   | 7681-52-9      | Not Applicable             | Not Applicable                             |
| Sodium Hydroxide    | 0.1-2.0     | 1310-73-2      | 2mg/m <sup>3</sup> ceiling | STEL/CEIL(c)<br>2mg/m <sup>3</sup> ceiling |
| Inert Ingredients   | Balance     | Not Applicable | Not Applicable             | Not Applicable                             |

**CARCINOGENICITY STATUS:** NTP - No, IARC - No, OSHA - No.

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| <b>HEALTH</b>         | 2        |
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| <b>SPECIAL HAZARD</b> | OX / COR |

# FORMULA 4112

## SECTION III - PHYSICAL DATA

**APPEARANCE:** Yellow-green liquid  
**BOILING POINT:** 219°F (104°C) for 12.5% NaOCl by wt.  
**FREEZING POINT:** - 11°F (- 24°C) for 12.5% NaOCl by wt.  
**ODOR:** Chlorine  
**pH:** 12.5 - 13.5 s.u. @ 25°C  
**VISCOSITY (Cs):** 2.15 @ 23°C for 12.5% NaOCl by wt.  
**% VOLATILE BY VOLUME:** Variable water plus products of decomposition  
**SOLUBILITY IN WATER:** Complete  
**SPECIFIC GRAVITY (Water=1):** 1.196 @ 20°C for 12.5% NaOCl by wt.  
**VAPOR DENSITY (AIR=1):** Not available  
**VAPOR PRESSURE (mm Hg):** Variable water plus products of decomposition.

## SECTION IV - FIRE AND EXPLOSION DATA

**FLASH POINT (Test method):** Not applicable  
**AUTO IGNITION TEMPERATURE:** Not applicable  
**FLAMMABLE LIMITS IN AIR (Volume %):** Not applicable  
**EXTINGUISHING MEDIA:** Flood with water or carbon dioxide (CO<sub>2</sub>)  
**SPECIAL FIRE FIGHTING PROCEDURES:** Use National Institute of Occupational Safety & Health (NIOSH) approved respirator with acid type canister or use self-contained breathing apparatus. Unusual fire and explosion hazards: material is a strong oxidizer. Contact with combustibles may initiate or promote combustion. Acid and heat accelerate decomposition. Decomposition products may include chlorine.

## SECTION V - HEALTH HAZARD INFORMATION

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

No medical conditions are known to be aggravated by exposure.

### ROUTES OF EXPOSURE

- **INHALATION:** Fumes from spills can cause severe irritation and chemical burns to the nose, throat, and lungs. Very little hazard from properly stored solution.
- **SKIN CONTACT:** Severe irritant, reddening of skin, can cause chemical burns to skin.
- **SKIN ABSORPTION:** Same as skin contact.
- **EYE CONTACT:** Severe irritant, corrosive, can severely burn eyes.
- **INGESTION:** Causes irritation of membranes of the mouth, throat, and stomach pain and possible ulceration. LD50 (oral, rat) for 12.5% NaOCl is approximately 5 g/kg body weight.

### EFFECTS OF OVEREXPOSURE

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## FORMULA 4112

**ACUTE OVEREXPOSURE (see Routes of Exposure above)**

- **SWALLOWING:** See "ingestion" under routes of exposure.
- **SKIN CONTACT:** severe Irritant, reddening of skin, skin damage, chemical burns.
- **INHALATION:** Fumes from spills are very irritating to mucous membranes.
- **EYE CONTACT:** Extreme irritant, corrosive.

**CHRONIC OVEREXPOSURE (see Routes of Exposure above)**

- **EYE:** Can cause damage.
- **SKIN:** Can cause damage, chemical burns.

### EMERGENCY AND FIRST AID PROCEDURES

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing; rinse skin immediately with plenty of water for 15-20 minutes; call a poison control center or doctor for treatment advice.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes; remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye; call a poison control center or doctor for treatment advice.

**IF SWALLOWED:** Call poison control center or doctor immediately for treatment advice; have person sip a glass of water if able to swallow; do not induce vomiting unless told to do so by the poison control center or doctor; do not give anything by mouth to an unconscious person.

**IF INHALED:** Move person to fresh air; if person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible; call a poison control center or doctor for further treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

### SECTION VI - REACTIVITY DATA

#### CONDITIONS CONTRIBUTING TO INSTABILITY

Solutions are fairly stable in concentrations below 10%. Stability decreases with concentration, heat, light, exposure, decrease in pH, and contamination with heavy metals, such as nickel, cobalt, copper, and iron.

#### INCOMPATIBILITY

Acids, alcohols, amines, ammonia, chlorinated isocyanurates, combustibles, cyanides, detergents, ethers, hydrocarbons, oxidizable materials, reducing agents. Corrosive to most metals.

#### DECOMPOSITION PRODUCTS

Hypochlorous Acid (HOCl), chlorine, hydrochloric acid. Composition depends upon temperature and decrease in pH. Additional decomposition products, which depend upon pH, temperature and time, are sodium chloride, sodium chlorate and oxygen.

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# FORMULA 4112

## CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION

Will not occur.

## SECTION VII - SPILL OR LEAK PROCEDURES

IN THE EVENT OF A TRANSPORTATION EMERGENCY, CALL CHEMTREC: (800) 255-3924

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Cleanup personnel must wear proper protective equipment (See Section VIII). Contain in diked area. Neutralize with sodium bisulfite or ferrous salt solutions. Place neutralized material in DOT specification approved container(s). Flush area with large amounts of water. Comply with all Federal, State and Local reporting requirements.

### WASTE DISPOSAL

Contact Federal, State, County, and Local environmental regulators for guidance regarding proper disposal.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

**VENTILATION REQUIREMENTS:** Local exhaust is recommended.

### SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

- **RESPIRATORY:** Use National Institute of Occupational Safety and Health (NIOSH) or Mine Safety and Health Administration (MSHA) approved respirator appropriate for this product when permissible exposure limits are exceeded.
- **EYES:** Use chemical goggles and face shield.
- **GLOVES:** Use chemical resistant rubber, plastic, or neoprene gloves.
- **OTHER:** Use chemical resistant splash apron and boots. Safety shower and eye wash fountain should be located nearby.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING

**DANGER:** This product is corrosive and may cause severe skin irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes, on skin or on clothing. Wear goggles and face shield and chemical resistant gloves when handling this product. Wash after handling. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until odors have dissipated.

### PROPER STORAGE AND DISPOSAL REQUIREMENTS

Store this product in a cool, dry area away from direct sunlight and heat to avoid deterioration. In case of spill, flood areas with large quantities of water.

Disposal for domestic use: Do not reuse container. Rinse thoroughly before discarding in trash. Disposal for all other uses: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Do not contaminate water, food, or feed by storage, disposal or cleaning of equipment.

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# FORMULA 4112

Store in an upright position!!!

## OTHER PRECAUTIONS

**STRONG OXIDIZING AGENT:** Mix only with water according to label directions. Mixing this product with gross filth such as feces, urine, etc., or with ammonia, acids, detergents or other chemicals may release hazardous gases irritating to eyes, lungs and mucous membranes.

### SECTION X – REGULATORY STATUS INFORMATION

- This product is listed in the Toxic Substances Control Act (TSCA) Inventory Of Chemical Substances.
- USEPA Pesticide Registration Number: 1744-20001
- Certified in Accordance with ANSI/NSF Standard 60 (Drinking Water Treatment Additives).  
Maximum Use Level: 80 mg/L
- Manufactured in Accordance with AWWA Standard for Hypochlorites, AWWA B300-99.
- USDA Authorized Uses: B1, D2, 3D, Q4
- SARA Title III Extremely Hazardous Substance: No
- SARA Title III Toxic Chemical: No

MSDS PREPARED BY: **Aqualine Water Treatment Products Inc.**  
**2371 Farrington Point Drive**  
**Winston-Salem, NC 27107**

ISSUE DATE: 5/1/03

The information herein is given in good faith but no warranty, expressed or implied is made.

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Revised: 06/2004

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**CHEMICAL NAME:** Sodium Hypochlorite  
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**DOT SHIPPING NAME:** Hypochlorite Solution  
**DOT HAZARD CLASS:** 8  
**UN/NA NUMBER:** UN 1791  
**DOT LABEL:** Corrosive  
**DOT PLACARD:** Corrosive  
**PACKING GROUP:** III  
**REPORTABLE QUANTITY:** Sodium Hypochlorite: 100 Pounds/45.4 Kilograms  
**CAS NUMBER:** 7681-52-9  
**NFPA DESIGNATION:** The NFPA has not rated sodium hypochlorite.

## SECTION II - HAZARDOUS INGREDIENTS

| MATERIAL            | % BY WEIGHT | CAS NO.        | OSHA PEL                   | ACGIH TLV                                  |
|---------------------|-------------|----------------|----------------------------|--|
| Sodium Hypochlorite | 12.5-15.6   | 7681-52-9      | Not Applicable             | Not Applicable                             |
| Sodium Hydroxide    | 0.1-2.0     | 1310-73-2      | 2mg/m <sup>3</sup> ceiling | STEL/CEIL(c)<br>2mg/m <sup>3</sup> ceiling |
| Inert Ingredients   | Balance     | Not Applicable | Not Applicable             | Not Applicable                             |

**CARCINOGENICITY STATUS:** NTP - No, IARC - No, OSHA - No.

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## SECTION III - PHYSICAL DATA

**APPEARANCE:** Yellow-green liquid  
**BOILING POINT:** 219°F (104°C) for 12.5% NaOCl by wt.  
**FREEZING POINT:** - 11°F (- 24°C) for 12.5% NaOCl by wt.  
**ODOR:** Chlorine  
**pH:** 12.5 - 13.5 s.u. @ 25°C  
**VISCOSITY (Cs):** 2.15 @ 23°C for 12.5% NaOCl by wt.  
**% VOLATILE BY VOLUME:** Variable water plus products of decomposition  
**SOLUBILITY IN WATER:** Complete  
**SPECIFIC GRAVITY (Water=1):** 1.196 @ 20°C for 12.5% NaOCl by wt.  
**VAPOR DENSITY (AIR=1):** Not available  
**VAPOR PRESSURE (mm Hg):** Variable water plus products of decomposition.

## SECTION IV - FIRE AND EXPLOSION DATA

**FLASH POINT (Test method):** Not applicable  
**AUTO IGNITION TEMPERATURE:** Not applicable  
**FLAMMABLE LIMITS IN AIR (Volume %):** Not applicable  
**EXTINGUISHING MEDIA:** Flood with water or carbon dioxide (CO<sub>2</sub>)  
**SPECIAL FIRE FIGHTING PROCEDURES:** Use National Institute of Occupational Safety & Health (NIOSH) approved respirator with acid type canister or use self-contained breathing apparatus. Unusual fire and explosion hazards: material is a strong oxidizer. Contact with combustibles may initiate or promote combustion. Acid and heat accelerate decomposition. Decomposition products may include chlorine.

## SECTION V - HEALTH HAZARD INFORMATION

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

No medical conditions are known to be aggravated by exposure.

### ROUTES OF EXPOSURE

- **INHALATION:** Fumes from spills can cause severe irritation and chemical burns to the nose, throat, and lungs. Very little hazard from properly stored solution.
- **SKIN CONTACT:** Severe irritant, reddening of skin, can cause chemical burns to skin.
- **SKIN ABSORPTION:** Same as skin contact.
- **EYE CONTACT:** Severe irritant, corrosive, can severely burn eyes.
- **INGESTION:** Causes irritation of membranes of the mouth, throat, and stomach pain and possible ulceration. LD50 (oral, rat) for 12.5% NaOCl is approximately 5 g/kg body weight.

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## EFFECTS OF OVEREXPOSURE

### ACUTE OVEREXPOSURE (see Routes of Exposure above)

- **SWALLOWING:** See "ingestion" under routes of exposure.
- **SKIN CONTACT:** severe irritant, reddening of skin, skin damage, chemical burns.
- **INHALATION:** Fumes from spills are very irritating to mucous membranes.
- **EYE CONTACT:** Extreme irritant, corrosive.

### CHRONIC OVEREXPOSURE (see Routes of Exposure above)

- **EYE:** Can cause damage.
- **SKIN:** Can cause damage, chemical burns.

## EMERGENCY AND FIRST AID PROCEDURES

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing; rinse skin immediately with plenty of water for 15-20 minutes; call a poison control center or doctor for treatment advice.

**EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes; remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye; call a poison control center or doctor for treatment advice.

**IF SWALLOWED:** Call poison control center or doctor immediately for treatment advice; have person sip a glass of water if able to swallow; do not induce vomiting unless told to do so by the poison control center or doctor; do not give anything by mouth to an unconscious person.

**IF INHALED:** Move person to fresh air; if person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible; call a poison control center or doctor for further treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

## SECTION VI - REACTIVITY DATA

### CONDITIONS CONTRIBUTING TO INSTABILITY

Solutions are fairly stable in concentrations below 10%. Stability decreases with concentration, heat, light, exposure, decrease in pH, and contamination with heavy metals, such as nickel, cobalt, copper, and iron.

### INCOMPATIBILITY

Acids, alcohols, amines, ammonia, chlorinated isocyanurates, combustibles, cyanides, detergents, ethers, hydrocarbons, oxidizable materials, reducing agents. Corrosive to most metals.

### DECOMPOSITION PRODUCTS

Chlorous Acid (HOCl), chlorine, hydrochloric acid. Composition depends upon temperature and decrease in pH. Additional decomposition products, which depend upon pH, temperature and time, are sodium chloride, sodium chlorate and oxygen.



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# FORMULA 4112

## CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION

Will not occur.

## SECTION VII - SPILL OR LEAK PROCEDURES

IN THE EVENT OF A TRANSPORTATION EMERGENCY, CALL CHEMTREC: (800) 255-3924

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Cleanup personnel must wear proper protective equipment (See Section VIII). Contain in diked area. Neutralize with sodium bisulfite or ferrous salt solutions. Place neutralized material in DOT specification approved container(s). Flush area with large amounts of water. Comply with all Federal, State and Local reporting requirements.

### WASTE DISPOSAL

Contact Federal, State, County, and Local environmental regulators for guidance regarding proper disposal.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

**VENTILATION REQUIREMENTS:** Local exhaust is recommended.

### SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

- **RESPIRATORY:** Use National Institute of Occupational Safety and Health (NIOSH) or Mine Safety and Health Administration (MSHA) approved respirator appropriate for this product when permissible exposure limits are exceeded.
- **EYES:** Use chemical goggles and face shield.
- **GLOVES:** Use chemical resistant rubber, plastic, or neoprene gloves.
- **OTHER:** Use chemical resistant splash apron and boots. Safety shower and eye wash fountain should be located nearby.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING

**DANGER:** This product is corrosive and may cause severe skin irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes, on skin or on clothing. Wear goggles and face shield and chemical resistant gloves when handling this product. Wash after handling. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until odors have dissipated.

### PROPER STORAGE AND DISPOSAL REQUIREMENTS

Store this product in a cool, dry area away from direct sunlight and heat to avoid deterioration. In case of spill, flood areas with large quantities of water.

Disposal for domestic use: Do not reuse container. Rinse thoroughly before discarding in trash. Disposal for all other: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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Do not contaminate water, food, or feed by storage, disposal or cleaning of equipment.

Store in an upright position!!!

## OTHER PRECAUTIONS

**STRONG OXIDIZING AGENT:** Mix only with water according to label directions. Mixing this product with gross filth such as feces, urine, etc., or with ammonia, acids, detergents or other chemicals may release hazardous gases irritating to eyes, lungs and mucous membranes.

## SECTION X – REGULATORY STATUS INFORMATION

- This product is listed in the Toxic Substances Control Act (TSCA) Inventory Of Chemical Substances.
- USEPA Pesticide Registration Number: 1744-20001
- Certified in Accordance with ANSI/NSF Standard 60 (Drinking Water Treatment Additives).  
Maximum Use Level: 80 mg/L
- Manufactured in Accordance with AWWA Standard for Hypochlorites, AWWA B300-99.
- USDA Authorized Uses: B1, D2, 3D, Q4
- SARA Title III Extremely Hazardous Substance: No
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MSDS PREPARED BY: **Aqualine Water Treatment Products Inc.**  
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**DOT PLACARD:** Corrosive  
**PACKING GROUP:** III  
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**CAS NUMBER:** 7681-52-9  
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| MATERIAL            | % BY WEIGHT | CAS NO.        | OSHA PEL                   | ACGIH TLV                                  |
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CARCINOGENICITY STATUS: NTP - No, IARC - No, OSHA - No.

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**ODOR:** Chlorine  
**pH:** 12.5 - 13.5 s.u. @ 25°C  
**VISCOSITY (Cs):** 2.15 @ 23°C for 12.5% NaOCl by wt.  
**% VOLATILE BY VOLUME:** Variable water plus products of decomposition  
**SOLUBILITY IN WATER:** Complete  
**SPECIFIC GRAVITY (Water=1):** 1.196 @ 20°C for 12.5% NaOCl by wt.  
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3 = HIGH  
2 = MODERATE  
1 = SLIGHT  
0 = INSIGNIFICANT

|                |  |
|----------------|--|
| FLAMMABILITY   |  |
| HEALTH         |  |
| REACTIVITY     |  |
| SPECIAL HAZARD |  |

# FORMULA 4112

## EFFECTS OF OVEREXPOSURE

### ACUTE OVEREXPOSURE (see Routes of Exposure above)

- **SWALLOWING:** See "ingestion" under routes of exposure.
- **SKIN CONTACT:** severe irritant, reddening of skin, skin damage, chemical burns.
- **INHALATION:** Fumes from spills are very irritating to mucous membranes.
- **EYE CONTACT:** Extreme irritant, corrosive.

### CHRONIC OVEREXPOSURE (see Routes of Exposure above)

- **EYE:** Can cause damage.
- **SKIN:** Can cause damage, chemical burns.

## EMERGENCY AND FIRST AID PROCEDURES

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing; rinse skin immediately with plenty of water for 15-20 minutes; call a poison control center or doctor for treatment advice.

**IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes; remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye; call a poison control center or doctor for treatment advice.

**IF SWALLOWED:** Call poison control center or doctor immediately for treatment advice; have person sip a glass of water if able to swallow; do not induce vomiting unless told to do so by the poison control center or doctor; do not give anything by mouth to an unconscious person.

**IF INHALED:** Move person to fresh air; if person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible; call a poison control center or doctor for further treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

## SECTION VI - REACTIVITY DATA

### CONDITIONS CONTRIBUTING TO INSTABILITY

Solutions are fairly stable in concentrations below 10%. Stability decreases with concentration, heat, light, exposure, decrease in pH, and contamination with heavy metals, such as nickel, cobalt, copper, and iron.

### INCOMPATIBILITY

Acids, alcohols, amines, ammonia, chlorinated isocyanurates, combustibles, cyanides, detergents, ethers, hydrocarbons, oxidizable materials, reducing agents. Corrosive to most metals.

### DECOMPOSITION PRODUCTS

hypochlorous Acid (HOCl), chlorine, hydrochloric acid. Composition depends upon temperature and decrease in pH. Additional decomposition products, which depend upon pH, temperature and time, are sodium chloride, sodium chlorate and oxygen.

# MATERIAL SAFETY DATA SHEET

NFPA Designation 704

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| HEALTH         |  |
| REACTIVITY     |  |
| SPECIAL HAZARD |  |

# FORMULA 4112

## CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION

Will not occur.

## SECTION VII - SPILL OR LEAK PROCEDURES

IN THE EVENT OF A TRANSPORTATION EMERGENCY, CALL CHEMTREC: (800) 255-3924

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Cleanup personnel must wear proper protective equipment (See Section VIII). Contain in diked area. Neutralize with sodium bisulfite or ferrous salt solutions. Place neutralized material in DOT specification approved container(s). Flush area with large amounts of water. Comply with all Federal, State and Local reporting requirements.

### WASTE DISPOSAL

Contact Federal, State, County, and Local environmental regulators for guidance regarding proper disposal.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

**VENTILATION REQUIREMENTS:** Local exhaust is recommended.

### SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

- **RESPIRATORY:** Use National Institute of Occupational Safety and Health (NIOSH) or Mine Safety and Health Administration (MSHA) approved respirator appropriate for this product when permissible exposure limits are exceeded.
- **EYES:** Use chemical goggles and face shield.
- **GLOVES:** Use chemical resistant rubber, plastic, or neoprene gloves.
- **OTHER:** Use chemical resistant splash apron and boots. Safety shower and eye wash fountain should be located nearby.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING

**DANGER:** This product is corrosive and may cause severe skin irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes, on skin or on clothing. Wear goggles and face shield and chemical resistant gloves when handling this product. Wash after handling. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until odors have dissipated.

### PROPER STORAGE AND DISPOSAL REQUIREMENTS

Store this product in a cool, dry area away from direct sunlight and heat to avoid deterioration. In case of spill, flood areas with large quantities of water.

**MATERIAL  
SAFETY  
DATA  
SHEET**

NFPA Designation 704

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| <b>FLAMMABILITY</b>   |  |
| <b>HEALTH</b>         |  |
| <b>REACTIVITY</b>     |  |
| <b>SPECIAL HAZARD</b> |  |

# FORMULA 4112

Disposal for domestic use: Do not reuse container. Rinse thoroughly before discarding in trash. Disposal for all other uses: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Do not contaminate water, food, or feed by storage, disposal or cleaning of equipment.

Store in an upright position!!!

## OTHER PRECAUTIONS

**STRONG OXIDIZING AGENT:** Mix only with water according to label directions. Mixing this product with gross filth such as feces, urine, etc., or with ammonia, acids, detergents or other chemicals may release hazardous gases irritating to eyes, lungs and mucous membranes.

## SECTION X – REGULATORY STATUS INFORMATION

- This product is listed in the Toxic Substances Control Act (TSCA) Inventory Of Chemical Substances.

USEPA Pesticide Registration Number: 1744-20001

- Certified in Accordance with ANSI/NSF Standard 60 (Drinking Water Treatment Additives).  
Maximum Use Level: 80 mg/L
- Manufactured in Accordance with AWWA Standard for Hypochlorites, AWWA B300-99.
- USDA Authorized Uses: B1, D2, 3D, Q4
- SARA Title III Extremely Hazardous Substance: No
- SARA Title III Toxic Chemical: No

MSDS PREPARED BY: **Aqualine Water Treatment Products Inc.**  
**2371 Farrington Point Drive**  
**Winston-Salem, NC 27107**

ISSUE DATE: 5/1/03

The information herein is given in good faith but no warranty, expressed or implied is made.

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SAFETY  
DATA  
SHEET**

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| <b>SPECIAL HAZARD</b> |  |

**FORMULA 4112**

Aqualine Water Treatment Products, Inc.  
2371 Farrington Point Drive  
Winston-Salem, NC 27107

24 Hour Emergency Phone  
CHEMTEL: 800-255-3924

Revised: 06/2004

**SECTION I - IDENTIFICATION**

**TRADE NAME:** AQUALINE FORMULA 4112  
**CHEMICAL NAME:** Sodium Hypochlorite  
**FORMULA:** NaOCl  
**DOT SHIPPING NAME:** Hypochlorite Solution  
**DOT HAZARD CLASS:** 8  
**UN/NA NUMBER:** UN 1791  
**DOT LABEL:** Corrosive  
**DOT PLACARD:** Corrosive  
**PACKING GROUP:** III  
**REPORTABLE QUANTITY:** Sodium Hypochlorite: 100 Pounds/45.4 Kilograms  
**CAS NUMBER:** 7681-52-9  
**NFPA DESIGNATION:** The NFPA has not rated sodium hypochlorite.

**SECTION II - HAZARDOUS INGREDIENTS**

| MATERIAL            | % BY WEIGHT | CAS NO.        | OSHA PEL                   | ACGIH TLV                                  |
|---------------------|-------------|----------------|----------------------------|--|
| Sodium Hypochlorite | 12.5-15.6   | 7681-52-9      | Not Applicable             | Not Applicable                             |
| Sodium Hydroxide    | 0.1-2.0     | 1310-73-2      | 2mg/m <sup>3</sup> ceiling | STEL/CEIL(c)<br>2mg/m <sup>3</sup> ceiling |
| Inert Ingredients   | Balance     | Not Applicable | Not Applicable             | Not Applicable                             |

**CARCINOGENICITY STATUS:** NTP - No, IARC - No, OSHA - No.



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## FORMULA 4112

### SECTION III - PHYSICAL DATA

**APPEARANCE:** Yellow-green liquid  
**BOILING POINT:** 219°F (104°C) for 12.5% NaOCl by wt.  
**FREEZING POINT:** - 11°F (- 24°C) for 12.5% NaOCl by wt.  
**ODOR:** Chlorine  
**pH:** 12.5 - 13.5 s.u. @ 25°C  
**VISCOSITY (Cs):** 2.15 @ 23°C for 12.5% NaOCl by wt.  
**% VOLATILE BY VOLUME:** Variable water plus products of decomposition  
**SOLUBILITY IN WATER:** Complete  
**SPECIFIC GRAVITY (Water=1):** 1.196 @ 20°C for 12.5% NaOCl by wt.  
**VAPOR DENSITY (AIR=1):** Not available  
**VAPOR PRESSURE (mm Hg):** Variable water plus products of decomposition.

### SECTION IV - FIRE AND EXPLOSION DATA

**FLASH POINT (Test method):** Not applicable  
**AUTO IGNITION TEMPERATURE:** Not applicable  
**FLAMMABLE LIMITS IN AIR (Volume %):** Not applicable  
**EXTINGUISHING MEDIA:** Flood with water or carbon dioxide (CO<sub>2</sub>)  
**SPECIAL FIRE FIGHTING PROCEDURES:** Use National Institute of Occupational Safety & Health (NIOSH) approved respirator with acid type canister or use self-contained breathing apparatus. Unusual fire and explosion hazards: material is a strong oxidizer. Contact with combustibles may initiate or promote combustion. Acid and heat accelerate decomposition. Decomposition products may include chlorine.

### SECTION V - HEALTH HAZARD INFORMATION

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

No medical conditions are known to be aggravated by exposure.

#### ROUTES OF EXPOSURE

- **INHALATION:** Fumes from spills can cause severe irritation and chemical burns to the nose, throat, and lungs. Very little hazard from properly stored solution.
- **SKIN CONTACT:** Severe irritant, reddening of skin, can cause chemical burns to skin.
- **SKIN ABSORPTION:** Same as skin contact.
- **EYE CONTACT:** Severe irritant, corrosive, can severely burn eyes.
- **INGESTION:** Causes irritation of membranes of the mouth, throat, and stomach pain and possible ulceration. LD50 (oral, rat) for 12.5% NaOCl is approximately 5 g/kg body weight.

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#### CONDITIONS CONTRIBUTING TO INSTABILITY

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#### INCOMPATIBILITY

Acids, alcohols, amines, ammonia, chlorinated isocyanurates, combustibles, cyanides, detergents, ethers, hydrocarbons, oxidizable materials, reducing agents. Corrosive to most metals.

#### DECOMPOSITION PRODUCTS

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## FORMULA 4112

Hypochlorous Acid (HOCl), chlorine, hydrochloric acid. Composition depends upon temperature and decrease in pH. Additional decomposition products, which depend upon pH, temperature and time, are sodium chloride, sodium chlorate and oxygen.

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**VENTILATION REQUIREMENTS:** Local exhaust is recommended.

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## FORMULA 4112

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Do not contaminate water, food, or feed by storage, disposal or cleaning of equipment.

Store in an upright position!!!

### OTHER PRECAUTIONS

**STRONG OXIDIZING AGENT:** Mix only with water according to label directions. Mixing this product with gross filth such as feces, urine, etc., or with ammonia, acids, detergents or other chemicals may release hazardous gases irritating to eyes, lungs and mucous membranes.

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Maximum Use Level: 80 mg/L
- Manufactured in Accordance with AWWA Standard for Hypochlorites, AWWA B300-99.
- USDA Authorized Uses: B1, D2, 3D, Q4
- SARA Title III Extremely Hazardous Substance: No
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