

## 1. Identification

**Product identifier** WATERMARK® KARL FISCHER COULOMETRIC VESSEL SOLUTION for OILS

**Other means of identification**

**Product code** 5202

**Recommended use** Laboratory reagent for water determination using the Karl Fischer method.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company name** GFS Chemicals, Inc.  
**Address** 800 Kaderly Drive  
 Columbus, OH 43228  
 United States

**Telephone** Phone 740-881-5501  
 Toll Free 800-858-9682  
 Fax 740-881-5989

**Website** www.gfschemicals.com  
**E-mail** service@gfschemicals.com

**Emergency phone number** Emergency Assistance Chemtrec 800-424-9300

## 2. Hazard(s) identification

|   |  |                             |
|---|--|-----------------------------|
| <b>Physical hazards</b>                           | Flammable liquids                                      | Category 2                  |
| <b>Health hazards</b>                             | Acute toxicity, oral                                   | Category 3                  |
|   | Acute toxicity, dermal                                 | Category 3                  |
|   | Acute toxicity, inhalation                             | Category 3                  |
|   | Skin corrosion/irritation                              | Category 2                  |
|   | Serious eye damage/eye irritation                      | Category 2A                 |
|   | Sensitization, skin                                    | Category 1                  |
|   | Carcinogenicity  | Category 2                  |
|   | Reproductive toxicity                                  | Category 1                  |
|   | Specific target organ toxicity, single exposure        | Category 1                  |
|   | Specific target organ toxicity, single exposure        | Category 3 narcotic effects |
| Specific target organ toxicity, repeated exposure | Category 1   |                             |
| Aspiration hazard                                 | Category 1   |                             |
| <b>Environmental hazards</b>                      | Hazardous to the aquatic environment, acute hazard     | Category 2                  |
|   | Hazardous to the aquatic environment, long-term hazard | Category 2                  |
| <b>OSHA defined hazards</b>                       | Not classified.  |                             |

**Label elements**



**Signal word** Danger

**Hazard statement** Highly flammable liquid and vapor. Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure. May cause drowsiness or dizziness. Suspected of causing cancer. May damage fertility or the unborn child. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

## Precautionary statement

### Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use explosion-proof electrical/ventilating/lighting equipment. Keep container tightly closed. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing mist/vapor. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear eye protection/face protection.

### Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage. If eye irritation persists: Get medical advice/attention.

### Storage

Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

### Disposal

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

### Supplemental information

3-5% of the mixture consists of component(s) of unknown acute oral toxicity. 40-65% of the mixture consists of component(s) of unknown acute dermal toxicity. 30-55% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 30-55% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

## 3. Composition/information on ingredients

### Mixtures

| Chemical name  | Common name and synonyms                                   | CAS number | %          |
|----------------|--|------------|------------|
| CHLOROFORM     | TRICHLOROMETHANE   | 67-66-3    | 30 - < 40* |
| METHYL ALCOHOL | WOOD ALCOHOL<br>METHANOL                                   | 67-56-1    | 20 - < 30* |
| IMIDAZOLE      | 1H-IMIDAZOLE<br>1,3-DIAZA-2,4-CYCLOPENTADIENE<br>Glyoxalin | 288-32-4   | 10 - < 20* |
| XYLENES        |  | 1330-20-7  | 10 - < 20* |
| ETHYLBENZENE   |  | 100-41-4   | 3 - < 5*   |
| SULFUR DIOXIDE |  | 7446-09-5  | 3 - < 5*   |
| IODINE         |  | 7553-56-2  | <2.2       |

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

### Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison center or doctor/physician. Call a poison center or doctor/physician if you feel unwell. Call a physician if symptoms develop or persist.

### Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. Get medical advice/attention if you feel unwell. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

### Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

### Ingestion

If swallowed: Immediately call a poison center or doctor/physician. Call a physician or poison control center immediately. Rinse mouth. If swallowed, induce vomiting immediately as directed by medical personnel. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give large quantities of water and induce vomiting. Seek medical attention.

### Most important symptoms/effects, acute and delayed

Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

|   |  |
|---|--|
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.  |
| <b>General information</b>  | Take off immediately all contaminated clothing. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.   |
| <b>5. Fire-fighting measures</b>  |  |
| <b>Suitable extinguishing media</b>   | Alcohol resistant foam. Water fog. Carbon dioxide (CO <sub>2</sub> ). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.   |
| <b>Unsuitable extinguishing media</b>   | Do not use water jet as an extinguisher, as this will spread the fire.   |
| <b>Specific hazards arising from the chemical</b>                             | Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.   |
| <b>Special protective equipment and precautions for firefighters</b>          | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.  |
| <b>Fire fighting equipment/instructions</b>                                   | In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.   |
| <b>Specific methods</b>   | Use standard firefighting procedures and consider the hazards of other involved materials.   |
| <b>General fire hazards</b>   | Highly flammable liquid and vapor. Emits toxic fumes under fire conditions.  |
| <b>6. Accidental release measures</b>   |  |
| <b>Personal precautions, protective equipment and emergency procedures</b>    | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Avoid breathing mist/vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.   |
| <b>Methods and materials for containment and cleaning up</b>                  | ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).<br><br>Large Spills: Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Take precautionary measures against static discharge. Use only non-sparking tools. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. The product is immiscible with water and will spread on the water surface. Should not be released into the environment. Clean up in accordance with all applicable regulations. Prevent entry into waterways, sewer, basements or confined areas. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Following product recovery, flush area with water.<br><br>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.<br><br>Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS. |
| <b>Environmental precautions</b>  | Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Inform appropriate managerial or supervisory personnel of all environmental releases. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.   |

## 7. Handling and storage

### Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Avoid breathing mist/vapor. Wear appropriate personal protective equipment. Avoid prolonged exposure. Wash hands thoroughly after handling. Should be handled in closed systems, if possible. Observe good industrial hygiene practices. Avoid release to the environment. Wash contaminated clothing before reuse.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

### Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS). Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components                     | Type    | Value     |
|--------------------------------|---------|-----------|
| CHLOROFORM (CAS 67-66-3)       | Ceiling | 240 mg/m3 |
|                                |         | 50 ppm    |
| ETHYLBENZENE (CAS 100-41-4)    | PEL     | 435 mg/m3 |
|                                |         | 100 ppm   |
| IODINE (CAS 7553-56-2)         | Ceiling | 1 mg/m3   |
|                                |         | 0.1 ppm   |
| METHYL ALCOHOL (CAS 67-56-1)   | PEL     | 260 mg/m3 |
|                                |         | 200 ppm   |
| SULFUR DIOXIDE (CAS 7446-09-5) | PEL     | 13 mg/m3  |
|                                |         | 5 ppm     |
| XYLENES (CAS 1330-20-7)        | PEL     | 435 mg/m3 |
|                                |         | 100 ppm   |

#### US. ACGIH Threshold Limit Values

| Components                   | Type | Value   |
|------------------------------|------|---------|
| CHLOROFORM (CAS 67-66-3)     | TWA  | 10 ppm  |
| ETHYLBENZENE (CAS 100-41-4)  | TWA  | 20 ppm  |
| METHYL ALCOHOL (CAS 67-56-1) | STEL | 250 ppm |

**US. ACGIH Threshold Limit Values Components**

| Components                     | Type | Value    |
|--------------------------------|------|----------|
|                                | TWA  | 200 ppm  |
| SULFUR DIOXIDE (CAS 7446-09-5) | STEL | 0.25 ppm |
| XYLENES (CAS 1330-20-7)        | STEL | 150 ppm  |
|                                | TWA  | 100 ppm  |

**US. NIOSH: Pocket Guide to Chemical Hazards Components**

| Components                     | Type    | Value                           |
|--------------------------------|---------|---------------------------------|
| CHLOROFORM (CAS 67-66-3)       | STEL    | 9.78 mg/m3                      |
| ETHYLBENZENE (CAS 100-41-4)    |         | 2 ppm                           |
|                                | STEL    | 545 mg/m3                       |
|                                | TWA     | 125 ppm<br>435 mg/m3            |
| IODINE (CAS 7553-56-2)         |         | 100 ppm                         |
|                                | Ceiling | 1 mg/m3                         |
| METHYL ALCOHOL (CAS 67-56-1)   |         | 0.1 ppm                         |
|                                | STEL    | 325 mg/m3                       |
|                                | TWA     | 250 ppm<br>260 mg/m3            |
| SULFUR DIOXIDE (CAS 7446-09-5) |         | 200 ppm                         |
|                                | STEL    | 13 mg/m3                        |
|                                | TWA     | 5 ppm<br>5 mg/m3                |
| XYLENES (CAS 1330-20-7)        |         | 2 ppm                           |
|                                | STEL    | 655 mg/m3                       |
|                                | TWA     | 150 ppm<br>435 mg/m3<br>100 ppm |

**Biological limit values**

**ACGIH Biological Exposure Indices Components**

| Components                   | Value    | Determinant                                   | Specimen            | Sampling Time |
|------------------------------|----------|---|---------------------|---------------|
| ETHYLBENZENE (CAS 100-41-4)  | 0.15 g/g | Sum of mandelic acid and phenylglyoxylic acid | Creatinine in urine | *             |
| METHYL ALCOHOL (CAS 67-56-1) | 15 mg/l  | Methanol                                      | Urine               | *             |
| XYLENES (CAS 1330-20-7)      | 1.5 g/g  | Methylhippuric acids                          | Creatinine in urine | *             |

\* - For sampling details, please see the source document.

**Exposure guidelines**

**US - California OELs: Skin designation**

METHYL ALCOHOL (CAS 67-56-1) Can be absorbed through the skin.

**US - Minnesota Haz Subs: Skin designation applies**

METHYL ALCOHOL (CAS 67-56-1) Skin designation applies.

**US - Tennessee OELs: Skin designation**

METHYL ALCOHOL (CAS 67-56-1) Can be absorbed through the skin.

**US ACGIH Threshold Limit Values: Skin designation**

METHYL ALCOHOL (CAS 67-56-1) Can be absorbed through the skin.

## US NIOSH Pocket Guide to Chemical Hazards: Skin designation

METHYL ALCOHOL (CAS 67-56-1)

Can be absorbed through the skin.

**Appropriate engineering controls** Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Provide eyewash station and safety shower.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear safety glasses with side shields (or goggles).

#### Skin protection

**Hand protection** Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**Other** Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Chemical respirator with organic vapor cartridge.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Observe any medical surveillance requirements. When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

## 9. Physical and chemical properties

|   |                             |
|---|-----------------------------|
| <b>Appearance</b>                                   | Clear.                      |
| <b>Physical state</b>                               | Liquid.                     |
| <b>Form</b>   | Liquid.                     |
| <b>Color</b>  | Colorless to light brown.   |
| <b>Odor</b>   | Characteristic.             |
| <b>Odor threshold</b>                               | Not available.              |
| <b>pH</b>   | Not available.              |
| <b>Melting point/freezing point</b>                 | -34 °F (-37 °C) estimated   |
| <b>Initial boiling point and boiling range</b>      | 141.8 °F (61 °C)            |
| <b>Flash point</b>                                  | 51.8 °F (11.0 °C) estimated |
| <b>Evaporation rate</b>                             | Not available.              |
| <b>Flammability (solid, gas)</b>                    | Not applicable.             |
| <b>Upper/lower flammability or explosive limits</b> |                             |
| <b>Flammability limit - lower (%)</b>               | 6 % estimated               |
| <b>Flammability limit - upper (%)</b>               | 30 % estimated              |
| <b>Explosive limit - lower (%)</b>                  | Not available.              |
| <b>Explosive limit - upper (%)</b>                  | Not available.              |
| <b>Vapor pressure</b>                               | 138 hPa estimated           |
| <b>Vapor density</b>                                | Not available.              |
| <b>Relative density</b>                             | Not available.              |
| <b>Solubility(ies)</b>                              |                             |
| <b>Solubility (water)</b>                           | Not miscible.               |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.              |
| <b>Auto-ignition temperature</b>                    | 725 °F (385 °C) estimated   |
| <b>Decomposition temperature</b>                    | Not available.              |
| <b>Viscosity</b>                                    | Not available.              |

Material name: WATERMARK® KARL FISCHER COULOMETRIC VESSEL SOLUTION for OILS

5202

Version #: 03

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## Other information

|                      |                        |
|----------------------|------------------------|
| Density              | 1.20 g/cm <sup>3</sup> |
| Explosive properties | Not explosive.         |
| Flammability class   | Flammable IB estimated |
| Flash point class    | Flammable IB           |
| Oxidizing properties | Not oxidizing.         |
| Percent volatile     | 75 % estimated         |
| Specific gravity     | 1.2                    |
| VOC                  | 75 % estimated         |

## 10. Stability and reactivity

|                                    |   |
|------------------------------------|---|
| Reactivity                         | The product is stable and non-reactive under normal conditions of use, storage and transport.   |
| Chemical stability                 | Stable at normal conditions.  |
| Possibility of hazardous reactions | Hazardous polymerization does not occur.  |
| Conditions to avoid                | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials. |
| Incompatible materials             | Strong acids. Strong oxidizing agents. Halogens.  |
| Hazardous decomposition products   | Hydrogen chloride. Carbon dioxide, carbon monoxide, oxides of sulfur and nitrogen.  |

## 11. Toxicological information

### Information on likely routes of exposure

|              |  |
|--------------|--|
| Inhalation   | Toxic if inhaled. May cause damage to organs by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting.                |
| Skin contact | Toxic in contact with skin. Causes skin irritation. May cause an allergic skin reaction.   |
| Eye contact  | Causes serious eye irritation.   |
| Ingestion    | Toxic if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. |

|  |   |
|--|---|
| Symptoms related to the physical, chemical and toxicological characteristics | Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. |
|--|---|

### Information on toxicological effects

|                |   |
|----------------|---|
| Acute toxicity | May be fatal if swallowed and enters airways. Toxic if inhaled. Toxic in contact with skin. |
|----------------|---|

| Product  | Species    | Test Results       |
|--|------------|--------------------|
| WATERMARK® KARL FISCHER COULOMETRIC VESSEL SOLUTION for OILS |            |                    |
| <b>Acute</b>   |            |                    |
| <b>Inhalation</b>  |            |                    |
| LC50   | Guinea pig | 16140 mg/l         |
|  | Mouse      | 7265 mg/l          |
|  | Rat        | 147 mg/l           |
| LCL0   | Rat        | 26670 mg/l         |
| <b>Oral</b>  |            |                    |
| LD50   | Dog        | 6988 mg/kg         |
|  | Mouse      | 111 mg/kg          |
|  | Rabbit     | 29270 mg/kg        |
| <b>Components</b>  |            |                    |
| <b>Species</b>   |            |                    |
| <b>Test Results</b>  |            |                    |
| CHLOROFORM (CAS 67-66-3)                                     |            |                    |
| <b>Acute</b>   |            |                    |
| <b>Inhalation</b>  |            |                    |
| LC50   | Rat        | 47.7 mg/l, 4 Hours |
| <b>Oral</b>  |            |                    |
| LD50   | Dog        | 2250 mg/kg         |
|  | Mouse      | 36 mg/kg           |

| Components                     | Species    | Test Results        |
|--------------------------------|------------|---------------------|
|                                | Rabbit     | 9827 mg/kg          |
|                                | Rat        | 2180 mg/kg          |
|                                |            | 1117 mg/kg          |
|                                |            | 908 mg/kg           |
|                                |            | 444 mg/kg           |
| ETHYLBENZENE (CAS 100-41-4)    |            |                     |
| <b><u>Acute</u></b>            |            |                     |
| <b>Dermal</b>                  |            |                     |
| LD50                           | Rabbit     | 17800 mg/kg         |
| <b>Oral</b>                    |            |                     |
| LD50                           | Rat        | 3500 mg/kg          |
| IMIDAZOLE (CAS 288-32-4)       |            |                     |
| <b><u>Acute</u></b>            |            |                     |
| <b>Oral</b>                    |            |                     |
| LD50                           | Rat        | 970 mg/kg           |
| IODINE (CAS 7553-56-2)         |            |                     |
| <b><u>Acute</u></b>            |            |                     |
| <b>Oral</b>                    |            |                     |
| LD50                           | Mouse      | 22 g/kg             |
|                                | Rabbit     | 10 g/kg             |
|                                | Rat        | 14 g/kg             |
| METHYL ALCOHOL (CAS 67-56-1)   |            |                     |
| <b><u>Acute</u></b>            |            |                     |
| <b>Dermal</b>                  |            |                     |
| LD50                           | Rabbit     | 15800 mg/kg         |
| <b>Inhalation</b>              |            |                     |
| LC50                           | Rat        | 87.5 mg/l, 6 Hours  |
| <b>Oral</b>                    |            |                     |
| LD50                           | Rat        | 5628 mg/kg          |
| SULFUR DIOXIDE (CAS 7446-09-5) |            |                     |
| <b><u>Acute</u></b>            |            |                     |
| <b>Inhalation</b>              |            |                     |
| LC50                           | Guinea pig | 1000 ppm, 20 Hours  |
|                                |            | 1000 mg/l, 20 Hours |
|                                |            | 130 ppm, 154 Hours  |
|                                |            | 130 mg/l, 154 Hours |
|                                | Mouse      | 1000 ppm, 4 Hours   |
|                                |            | 1000 mg/l, 4 Hours  |
|                                |            | 150 ppm, 847 Hours  |
|                                |            | 150 mg/l, 847 Hours |
| XYLENES (CAS 1330-20-7)        |            |                     |
| <b><u>Acute</u></b>            |            |                     |
| <b>Dermal</b>                  |            |                     |
| LD50                           | Rabbit     | > 43 g/kg           |
| <b>Inhalation</b>              |            |                     |
| LC50                           | Mouse      | 3907 mg/l, 6 h      |
|                                | Rat        | 6350 mg/l, 4 h      |
| LCL0                           | Rat        | 8000 mg/l, 4 h      |
| <b>Oral</b>                    |            |                     |
| LD50                           | Mouse      | 5627 mg/kg          |
|                                |            | 1590 mg/kg          |

| Components  | Species   | Test Results   |
|---|---|--|
|   | Rat   | 3523 - 8600 mg/kg<br>6670 mg/kg<br>4300 mg/kg<br>3523 - 8600 mg/kg |
| <b>Skin corrosion/irritation</b>                                      | Causes skin irritation.   |  |
| <b>Serious eye damage/eye irritation</b>                              | Causes serious eye irritation.  |  |
| <b>Respiratory or skin sensitization</b>                              |   |  |
| <b>Respiratory sensitization</b>                                      | Not a respiratory sensitizer.   |  |
| <b>Skin sensitization</b>   | May cause an allergic skin reaction.  |  |
| <b>Germ cell mutagenicity</b>   | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.  |  |
| <b>Carcinogenicity</b>  | Suspected of causing cancer.  |  |
| <b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>         |   |  |
| CHLOROFORM (CAS 67-66-3)  | 2B Possibly carcinogenic to humans.   |  |
| ETHYLBENZENE (CAS 100-41-4)   | 2B Possibly carcinogenic to humans.   |  |
| SULFUR DIOXIDE (CAS 7446-09-5)  | 3 Not classifiable as to carcinogenicity to humans.   |  |
| XYLENES (CAS 1330-20-7)   | 3 Not classifiable as to carcinogenicity to humans.   |  |
| <b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)</b> |   |  |
| Not regulated.  |   |  |
| <b>US. National Toxicology Program (NTP) Report on Carcinogens</b>    |   |  |
| CHLOROFORM (CAS 67-66-3)  | Reasonably Anticipated to be a Human Carcinogen.  |  |
| <b>Reproductive toxicity</b>  | Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals. May damage fertility or the unborn child. |  |
| <b>Specific target organ toxicity - single exposure</b>               | Causes damage to organs. May cause drowsiness and dizziness.  |  |
| <b>Specific target organ toxicity - repeated exposure</b>             | Causes damage to organs through prolonged or repeated exposure.   |  |
| <b>Aspiration hazard</b>  | May be fatal if swallowed and enters airways.   |  |
| <b>Chronic effects</b>  | Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.            |  |

## 12. Ecological information

| Product  | Species | Test Results   |
|--|---------|--|
| Ecotoxicity Toxic to aquatic life with long lasting effects. |         |  |
| WATERMARK® KARL FISCHER COULOMETRIC VESSEL SOLUTION for OILS |         |  |
| <b>Aquatic</b>   |         |  |
| Crustacea  | EC50    | Daphnia 98.4663 mg/l, 48 hours estimated                                       |
| Fish   | LC50    | Fish 60.9081 mg/l, 96 hours estimated  |
| <b>Components</b>  |         |  |
| CHLOROFORM (CAS 67-66-3)                                     |         |  |
| <b>Aquatic</b>   |         |  |
| Fish   | LC50    | Rainbow trout,donaldson trout (Oncorhynchus mykiss) 15.1 mg/l, 96 hours        |
| ETHYLBENZENE (CAS 100-41-4)                                  |         |  |
| <b>Aquatic</b>   |         |  |
| Crustacea  | EC50    | Water flea (Daphnia magna) 1.37 - 4.4 mg/l, 48 hours                           |
| Fish   | LC50    | Fathead minnow (Pimephales promelas) 7.5 - 11 mg/l, 96 hours                   |
| IODINE (CAS 7553-56-2)                                       |         |  |
| <b>Aquatic</b>   |         |  |
| Fish   | LC50    | Rainbow trout,donaldson trout (Oncorhynchus mykiss) 0.48 - 0.58 mg/l, 96 hours |
|  |         | 0.48 - 0.58 mg/l, 96 hours   |

| Components                   | Species | Test Results  |
|------------------------------|---------|---|
| METHYL ALCOHOL (CAS 67-56-1) |         |   |
| <b>Aquatic</b>               |         |   |
| Crustacea                    | EC50    | Water flea (Daphnia magna) > 10000 mg/l, 48 hours           |
| Fish                         | LC50    | Bluegill (Lepomis macrochirus) 13500 - 17600 mg/l, 96 hours |
| XYLENES (CAS 1330-20-7)      |         |   |
| <b>Aquatic</b>               |         |   |
| Fish                         | LC50    | Bluegill (Lepomis macrochirus) 7.711 - 9.591 mg/l, 96 hours |

**Persistence and degradability** None known.

**Bioaccumulative potential**

**Partition coefficient n-octanol / water (log Kow)**

|                |            |
|----------------|------------|
| CHLOROFORM     | 1.97       |
| ETHYLBENZENE   | 3.15       |
| IODINE         | 2.49       |
| METHYL ALCOHOL | -0.77      |
| XYLENES        | 3.12 - 3.2 |

**Mobility in soil** No data available.

**Other adverse effects** The product contains volatile organic compounds which have a photochemical ozone creation potential.

**13. Disposal considerations**

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** D001: Waste Flammable material with a flash point <140 F  
D022: Waste chloroform  
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport information**

**DOT**

|                                     |   |
|-------------------------------------|---|
| <b>UN number</b>                    | UN1993  |
| <b>UN proper shipping name</b>      | Flammable liquids, n.o.s. (METHYL ALCOHOL RQ = 23364 LBS, XYLENES RQ = 540 LBS) |
| <b>Transport hazard class(es)</b>   |   |
| <b>Class</b>                        | 3   |
| <b>Subsidiary risk</b>              | -   |
| <b>Label(s)</b>                     | 3   |
| <b>Packing group</b>                | II  |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling.         |
| <b>Special provisions</b>           | IB2, T7, TP1, TP8, TP28   |
| <b>Packaging exceptions</b>         | 150   |
| <b>Packaging non bulk</b>           | 202   |
| <b>Packaging bulk</b>               | 242   |

**IATA**

|                                   |  |
|-----------------------------------|--|
| <b>UN number</b>                  | UN1993   |
| <b>UN proper shipping name</b>    | Flammable liquid, n.o.s. (METHYL ALCOHOL, XYLENES) |
| <b>Transport hazard class(es)</b> |  |
| <b>Class</b>                      | 3  |
| <b>Subsidiary risk</b>            | -  |
| <b>Packing group</b>              | II   |
| <b>Environmental hazards</b>      | No.  |

**ERG Code** 3H  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Other information**

**Passenger and cargo aircraft** Allowed with restrictions.

**Cargo aircraft only** Allowed with restrictions.

**IMDG**

**UN number** UN1993

**UN proper shipping name** FLAMMABLE LIQUID, N.O.S. (METHYL ALCOHOL, XYLENES)

**Transport hazard class(es)**

**Class** 3

**Subsidiary risk** -

**Packing group** II

**Environmental hazards**

**Marine pollutant** No.

**EmS** F-E, S-E

**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

**DOT**



**IATA; IMDG**



## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

CHLOROFORM (CAS 67-66-3) Listed.

ETHYLBENZENE (CAS 100-41-4) Listed.

METHYL ALCOHOL (CAS 67-56-1) Listed.

XYLENES (CAS 1330-20-7) Listed.

**SARA 304 Emergency release notification**

CHLOROFORM (CAS 67-66-3) 10 LBS

SULFUR DIOXIDE (CAS 7446-09-5) 500 LBS

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)**

Not regulated.

## Superfund Amendments and Reauthorization Act of 1986 (SARA)

### SARA 302 Extremely hazardous substance

| Chemical name  | CAS number | Reportable quantity (pounds) | Threshold planning quantity (pounds) | Threshold planning quantity, lower value (pounds) | Threshold planning quantity, upper value (pounds) |
|----------------|------------|------------------------------|--------------------------------------|---|---|
| CHLOROFORM     | 67-66-3    | 10                           | 10000                                |   |   |
| SULFUR DIOXIDE | 7446-09-5  | 500                          | 500                                  |   |   |

### SARA 311/312

#### Hazardous chemical

##### Classified hazard categories

Yes

Flammable (gases, aerosols, liquids, or solids)  
Acute toxicity (any route of exposure)  
Skin corrosion or irritation  
Serious eye damage or eye irritation  
Respiratory or skin sensitization  
Carcinogenicity  
Reproductive toxicity  
Specific target organ toxicity (single or repeated exposure)  
Aspiration hazard  
Hazard not otherwise classified (HNOC)

### SARA 313 (TRI reporting)

| Chemical name  | CAS number | % by wt.  |
|----------------|------------|-----------|
| CHLOROFORM     | 67-66-3    | 30 - < 40 |
| ETHYLBENZENE   | 100-41-4   | 3 - < 5   |
| METHYL ALCOHOL | 67-56-1    | 20 - < 30 |
| XYLENES        | 1330-20-7  | 10 - < 20 |

## Other federal regulations

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

CHLOROFORM (CAS 67-66-3)  
ETHYLBENZENE (CAS 100-41-4)  
METHYL ALCOHOL (CAS 67-56-1)  
XYLENES (CAS 1330-20-7)

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

CHLOROFORM (CAS 67-66-3)  
SULFUR DIOXIDE (CAS 7446-09-5)

### Safe Drinking Water Act (SDWA)

Not regulated.

### Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

IODINE (CAS 7553-56-2) 2.2 %WV

### DEA Exempt Chemical Mixtures Code Number

IODINE (CAS 7553-56-2) 6699

### FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

SULFUR DIOXIDE (CAS 7446-09-5) High priority

## US state regulations

### California Proposition 65



**WARNING:** This product can expose you to chemicals including CHLOROFORM, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### California Proposition 65 - CRT: Listed date/Carcinogenic substance

CHLOROFORM (CAS 67-66-3) Listed: October 1, 1987  
ETHYLBENZENE (CAS 100-41-4) Listed: June 11, 2004

### California Proposition 65 - CRT: Listed date/Developmental toxin

CHLOROFORM (CAS 67-66-3) Listed: August 7, 2009  
METHYL ALCOHOL (CAS 67-56-1) Listed: March 16, 2012  
SULFUR DIOXIDE (CAS 7446-09-5) Listed: July 29, 2011

### US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

CHLOROFORM (CAS 67-66-3)  
ETHYLBENZENE (CAS 100-41-4)  
IMIDAZOLE (CAS 288-32-4)  
METHYL ALCOHOL (CAS 67-56-1)  
SULFUR DIOXIDE (CAS 7446-09-5)

**International Inventories**

| <b>Country(s) or region</b> | <b>Inventory name</b>  | <b>On inventory (yes/no)*</b> |
|-----------------------------|--|-------------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                           |
| Canada                      | Domestic Substances List (DSL)   | Yes                           |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                            |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                           |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                           |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                            |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | No                            |
| Korea                       | Existing Chemicals List (ECL)  | Yes                           |
| New Zealand                 | New Zealand Inventory  | Yes                           |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                           |
| Taiwan                      | Taiwan Chemical Substance Inventory (TCSI)                             | No                            |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                           |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

**Issue date** April-29-2015

**Revision date** August-17-2018

**Version #** 03

**Disclaimer**

GFS Chemicals, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

**Revision information**

This document has undergone significant changes and should be reviewed in its entirety.