

## Safety Data Sheet 1600109

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 12/12/2016 Version: 1.0

SECTION 1: Identification	
1.1. Identification	
Product form	Substance
Substance name	Benzene
CAS No :	: 71-43-2
Product code :	: 1600-1-09
Formula	: C6H6
Other means of identification	: MFCD00003009
1.2. Relevant identified uses of the substa	nce or mixture and uses advised against
Use of the substance/mixture	: Laboratory chemicals Manufacture of substances Scientific research and development
1.3. Details of the supplier of the safety da	ata sheet
SynQuest Laboratories, Inc. P.O. Box 309 Alachua, FL 32615 - United States of America T (386) 462-0788 - F (386) 462-7097 info@synquestlabs.com - www.synquestlabs.com	
1.4. Emergency telephone number	
Emergency number	: (844) 523-4086 (3E Company - Account 10069)
SECTION 2: Hazard(s) identification	
2.1. Classification of the substance or mix	ture
Classification (GHS-US)	
Flam. Liq. 2H225 - Highly flammable liq Acute Tox. 4 (Oral)Acute Tox. 4 (Oral)H302 - Harmful if swallowedSkin Irrit. 2H315 - Causes skin irritationEye Irrit. 2AH319 - Causes serious eyeMuta. 1BH340 - May cause genetic of Carc. 1ACarc. 1AH350 - May cause cancerSTOT SE 3H335 - May cause respiratoSTOT RE 1H372 - Causes damage to of Asp. Tox. 1Aquatic Acute 3H402 - Harmful to aquatic li H412 - Harmful to aquatic li Full text of H-phrases: see section 16	n irritation defects ory irritation organs through prolonged or repeated exposure owed and enters airways fe

#### 2.2. Label elements

#### **GHS-US** labeling

Hazard pictograms (GHS-US)

GHS02 GHS07 GHS08 Signal word (GHS-US) : Danger H225 - Highly flammable liquid and vapor Hazard statements (GHS-US) : H302 - Harmful if swallowed H304 - May be fatal if swallowed and enters airways H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation H340 - May cause genetic defects H350 - May cause cancer H372 - Causes damage to organs through prolonged or repeated exposure H412 - Harmful to aquatic life with long lasting effects : P201 - Obtain special instructions before use Precautionary statements (GHS-US) P202 - Do not handle until all safety precautions have been read and understood EN (English US) SDS ID: 1600109

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ventilating/lighting equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P260 - Do not breathe fumes, mist, spray, vapors
P264 - Wash skin thoroughly after handling
P270 - De not precautionary measures against static discharge

P270 - Do not eat, drink or smoke when using this product

P271 - Use only outdoors or in a well-ventilated area

P273 - Avoid release to the environment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P301+P310 - If swallowed: Immediately call a poison center/doctor/...

P301+P312 - If swallowed: Call a POISON CENTER or doctor/ physician if you feel unwell

P302+P352 - If on skin: Wash with plenty of soap and water

P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing

P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P308+P313 - If exposed or concerned: Get medical advice/attention

P312 - Call a POISON CENTER or doctor/physician if you feel unwell

P314 - Get medical advice/attention if you feel unwell

P321 - Specific treatment (see supplemental first aid instructions on this label)

P330 - Rinse mouth

P331 - Do NOT induce vomiting

P332+P313 - If skin irritation occurs: Get medical advice/attention

P337+P313 - If eye irritation persists: Get medical advice/attention

P362+P364 - Take off contaminated clothing and wash it before reuse

P370+P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

P403+P233 - Store in a well-ventilated place. Keep container tightly closed

P403+P235 - Store in a well-ventilated place. Keep cool

P405 - Store locked up

P501 - Dispose of contents/container to an approved waste disposal plant

### 2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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

3.1. Substance Substance type

: Mono-constituent

Name	Product identifier	%	Classification (GHS-US)
Benzene (Main constituent)	(CAS No) 71-43-2	<= 100	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Muta. 1B, H340 Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372 Asp. Tox. 1, H304 Aquatic Acute 3, H402 Aquatic Chronic 3, H412

Full text of H-phrases: see section 16

3.2. Mixture	
Not applicable	
SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures general	: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Move the affected personnel away from the contaminated area.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Get immediate medical advice/attention.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention.
First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Safety Data Sheet

4.3.       Indication of any immediate medical a         Treat symptomatically.         SECTION 5: Firefighting measures         5.1.       Extinguishing media         Suitable extinguishing media       :         5.2.       Special hazards arising from the subs         Fire hazard       :         Explosion hazard       :         5.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measu       :         6.1.       Personal precautions, protective equi         General measures       :         6.1.1.       For non-emergency personnel         Emergency procedures       :         6.1.1.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Wethods	<ul> <li>The most important known symptoms and effects are described in the labelling 2.2) and/or in section 11.</li> <li>Ittention and special treatment needed</li> <li>Alcohol resistant foam. Carbon dioxide. Dry powder. Water spray. Use extinguis appropriate for surrounding fire.</li> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal reperson or spray.</li> <li>Conly qualified personnel equipped with suitable protective equipment may intervient to take action without suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every poing intion.</li> </ul>	shing media g exposed breathing al protection". the gas, fumes, vene. information or below ground
Symptoms/injuries       :         4.3.       Indication of any immediate medical a         Treat symptomatically.         SECTION 5: Firefighting measures         5.1.       Extinguishing media         Suitable extinguishing media       :         5.2.       Special hazards arising from the subs         Fire hazard       :         5.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measures       :         6.1.       Personal precautions, protective equi         General measures       :         6.1.1.       For non-emergency personnel         Emergency procedures       :         6.1.1.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :	<ul> <li>The most important known symptoms and effects are described in the labelling 2.2) and/or in section 11.</li> <li>Ittention and special treatment needed</li> <li>Alcohol resistant foam. Carbon dioxide. Dry powder. Water spray. Use extinguis appropriate for surrounding fire.</li> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal reperson or spray.</li> <li>Conly qualified personnel equipped with suitable protective equipment may intervient to take action without suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every poing intion.</li> </ul>	shing media g exposed breathing al protection". the gas, fumes, vene. information or below ground
4.3.       Indication of any immediate medical a         Treat symptomatically.         SECTION 5: Firefighting measures         5.1.       Extinguishing media         Suitable extinguishing media       :         5.2.       Special hazards arising from the subs         Fire hazard       :         Explosion hazard       :         5.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measu       :         6.1.       Personal precautions, protective equi         General measures       :         6.1.1.       For non-emergency personnel         Emergency procedures       :         6.1.1.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Wethods	<ul> <li>2.2) and/or in section 11.</li> <li>Ittention and special treatment needed</li> <li>Alcohol resistant foam. Carbon dioxide. Dry powder. Water spray. Use extinguis appropriate for surrounding fire.</li> <li>Itance or mixture</li> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal apparatus. For further information refer to section 8: "Exposure controls/personal vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may interverter to section 8: "Exposure controls/personal vapor or spray.</li> <li>On ot attempt to take action without suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every poignition.</li> </ul>	shing media g exposed breathing al protection". the gas, fumes, vene. information or below ground
Treat symptomatically.         SECTION 5: Firefighting media         Suitable extinguishing media         Suitable extinguishing media         Suitable extinguishing media         S.2.       Special hazards arising from the subs         Fire hazard       :         Explosion hazard       :         S.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measures       :         6.1.       Personal precautions, protective equi         General measures       :         6.1.1.       For emergency personnel         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Wethods for cleaning up       :	<ul> <li>Alcohol resistant foam. Carbon dioxide. Dry powder. Water spray. Use extinguis appropriate for surrounding fire.</li> <li>stance or mixture</li> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/persona" (Ifes)</li> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every point.</li> </ul>	ig exposed breathing al protection". the gas, fumes, vene. information or below ground
SECTION 5: Firefighting measures         5.1.       Extinguishing media         Suitable extinguishing media       :         Suitable extinguishing media       :         S.2.       Special hazards arising from the subs         Fire hazard       :         Explosion hazard       :         S.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measures       :         Section during firefighting       : <td><ul> <li>appropriate for surrounding fire.</li> <li>appropriate for surrounding fire.</li> <li>atance or mixture</li> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal refers</li> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may interverter to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every potignition.</li> </ul></td> <td>ig exposed breathing al protection". the gas, fumes, vene. information or below ground</td>	<ul> <li>appropriate for surrounding fire.</li> <li>appropriate for surrounding fire.</li> <li>atance or mixture</li> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal refers</li> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may interverter to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every potignition.</li> </ul>	ig exposed breathing al protection". the gas, fumes, vene. information or below ground
5.1.       Extinguishing media         Suitable extinguishing media       :         5.2.       Special hazards arising from the subs         Fire hazard       :         Explosion hazard       :         5.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measures       :         6.1.       Personal precautions, protective equi         General measures       :         6.1.1.       For non-emergency personnel         Emergency procedures       :         6.1.1.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Wethods for cleaning up       :	<ul> <li>appropriate for surrounding fire.</li> <li>appropriate for surrounding fire.</li> <li>atance or mixture</li> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal refers</li> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may interverter to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every potignition.</li> </ul>	ig exposed breathing al protection". the gas, fumes, vene. information or below ground
Suitable extinguishing media       :         5.2.       Special hazards arising from the subs         Fire hazard       :         Explosion hazard       :         5.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measures       :         6.1.       Personal precautions, protective equi         General measures       :         6.1.1.       For non-emergency personnel         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Wethods for cleaning up       :	<ul> <li>appropriate for surrounding fire.</li> <li>appropriate for surrounding fire.</li> <li>atance or mixture</li> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal refers</li> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may interverter to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every potignition.</li> </ul>	ig exposed breathing al protection". the gas, fumes, vene. information or below ground
5.2.       Special hazards arising from the subs         Fire hazard       :         Explosion hazard       :         5.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measures       :         Section during firefighting	<ul> <li>appropriate for surrounding fire.</li> <li>appropriate for surrounding fire.</li> <li>atance or mixture</li> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal refers</li> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may interverter to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every potignition.</li> </ul>	ig exposed breathing al protection". the gas, fumes, vene. information or below ground
Fire hazard       :         Explosion hazard       :         5.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measures       :         6.1.       Personal precautions, protective equi         General measures       :         6.1.1.       For non-emergency personnel         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Wethods for cleaning up       :	<ul> <li>Thermal decomposition generates: Carbon oxides.</li> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal apparatus. For further information refer to section 8: "Exposure controls/personal restance of procedures</li> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may interverse to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every potential.</li> </ul>	breathing al protection". the gas, fumes, vene. information or below ground
Explosion hazard       :         5.3.       Advice for firefighters         Firefighting instructions       :         Protection during firefighting       :         SECTION 6: Accidental release measures       :         6.1.       Personal precautions, protective equi         General measures       :         6.1.1.       For non-emergency personnel         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Wethods for cleaning up       :	<ul> <li>Risk of explosion if heated under confinement. Use water spray or fog for coolin containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal response of the explosion of the explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal trees of the explosion of the explosion.</li> <li>In case of the explosion of the explosion.</li> <li>In case of the explosion of the explosion of the explosion of the explosion.</li> <li>In case of the explosion of the explosion of the explosion of the explosion.</li> <li>In case of the explosion of the explosion of the explosion of the explosion.</li> <li>In case of the explosion of the explosion of the explosion of the explosion.</li> <li>In case of the explosion of the explosion.</li> <li>In case of the explosion of the e</li></ul>	breathing al protection". the gas, fumes, vene. information or below ground
5.3.       Advice for firefighters         Firefighting instructions       ::         Protection during firefighting       ::         SECTION 6: Accidental release measures       :         6.1.       Personal precautions, protective equi         General measures       ::         6.1.1.       For non-emergency personnel         Emergency procedures       ::         6.1.2.       For emergency responders         Protective equipment       ::         Emergency procedures       ::         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       ::         Wethods for cleaning up       ::	<ul> <li>containers. May form flammable/explosive vapor-air mixture.</li> <li>In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</li> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal response of the explosion of t</li></ul>	breathing al protection". the gas, fumes, vene. information or below ground
Firefighting instructions Protection during firefighting SECTION 6: Accidental release measu ESECTION 6: Accidental releas	<ul> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal residuation of the end of</li></ul>	al protection". the gas, fumes, vene. information or below ground
Protection during firefighting       ::         SECTION 6: Accidental release measu         6.1. Personal precautions, protective equi         General measures       ::         6.1.1. For non-emergency personnel         Emergency procedures       ::         6.1.2. For emergency responders         Protective equipment       ::         Emergency procedures       ::         6.1.2. For emergency responders         Protective equipment       ::         Emergency procedures       ::         6.2. Environmental precautions         Avoid release to the environment. Notify authorities         6.3. Methods and material for containment         For containment       ::         Wethods for cleaning up       ::	<ul> <li>Wear gas tight chemically protective clothing in combination with self contained apparatus. For further information refer to section 8: "Exposure controls/personal residuation of the end of</li></ul>	al protection". the gas, fumes, vene. information or below ground
SECTION 6: Accidental release measures         6.1.       Personal precautions, protective equi         General measures       ::         6.1.1.       For non-emergency personnel         Emergency procedures       ::         6.1.2.       For emergency responders         Protective equipment       ::         Emergency procedures       ::         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       ::         Wethods for cleaning up       ::	<ul> <li>apparatus. For further information refer to section 8: "Exposure controls/personal ires</li> <li>pment and emergency procedures</li> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may intervent to take action without suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every potignition.</li> </ul>	al protection". the gas, fumes, vene. information or below ground
6.1.       Personal precautions, protective equi         General measures       :         For emergency procedures       :         Emergency procedures       :         General measures       :         General	<ul> <li>pment and emergency procedures</li> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may intervent.</li> <li>Do not attempt to take action without suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every por ignition.</li> </ul>	vene. information or below ground
General measures       :         6.1.1.       For non-emergency personnel         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Wethods for cleaning up       :	<ul> <li>Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breat vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may intervent.</li> <li>Do not attempt to take action without suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every por ignition.</li> </ul>	vene. information or below ground
6.1.1.       For non-emergency personnel         Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Methods for cleaning up       :	<ul> <li>vapor or spray.</li> <li>Only qualified personnel equipped with suitable protective equipment may interview.</li> <li>Do not attempt to take action without suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every point in the space of th</li></ul>	vene. information or below ground
Emergency procedures       :         6.1.2.       For emergency responders         Protective equipment       :         Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Wethods for cleaning up       :	<ul> <li>Do not attempt to take action without suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every point ignition.</li> </ul>	information or below ground
6.1.2.       For emergency responders         Protective equipment       ::         Emergency procedures       ::         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities       ::         6.3.       Methods and material for containment         For containment       ::         Wethods for cleaning up       ::	<ul> <li>Do not attempt to take action without suitable protective equipment. For further refer to section 8: "Exposure controls/personal protection".</li> <li>Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every point ignition.</li> </ul>	information or below ground
Protective equipment : Emergency procedures : 6.2. Environmental precautions Avoid release to the environment. Notify authorities 6.3. Methods and material for containment For containment : Methods for cleaning up :	refer to section 8: "Exposure controls/personal protection". Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every point ignition.	or below ground
Emergency procedures       :         6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment       :         Methods for cleaning up       :	refer to section 8: "Exposure controls/personal protection". Gas/vapor heavier than air. May accumulate in confined spaces, particularly at level. Consider the risk of potentially explosive atmospheres. Eliminate every point ignition.	or below ground
6.2.       Environmental precautions         Avoid release to the environment. Notify authorities         6.3.       Methods and material for containment         For containment	level. Consider the risk of potentially explosive atmospheres. Eliminate every point ignition.	
Avoid release to the environment. Notify authorities 6.3. Methods and material for containment For containment Methods for cleaning up	s if product enters sewers or public waters.	
6.3. Methods and material for containment For containment Methods for cleaning up	s if product enters sewers or public waters.	
For containment : Methods for cleaning up :		
Methods for cleaning up :	t and cleaning up	
	: Stop leak if safe to do so. Dike for recovery or absorb with appropriate material.	
Other information :	Take up large spills with pump or vacuum and finish with dry chemical absorber explosion-proof equipment. Take up small spills with dry chemical absorbent. So spills into appropriate container for disposal. Ventilate area.	
	For disposal of solid materials or residues refer to section 13 : "Disposal consider	erations".
6.4. Reference to other sections		
No additional information available		
SECTION 7: Handling and storage		
7.1. Precautions for safe handling		
Additional hazards when processed	Handle empty containers with care because residual vapors are flammable.	
Precautions for safe handling :	Do not handle until all safety precautions have been read and understood. Ensu ventilation of the work station. Do not breathe fumes, mist, spray, vapors. Wear protective equipment. Avoid contact with skin and eyes. Keep away from ignition (including static discharges). Proper grounding procedures to avoid static electr followed. Use only non-sparking tools.	personal n sources
Hygiene measures :	: Handle in accordance with good industrial hygiene and safety procedures. Do n smoke when using this product. Always wash hands after handling the product.	ot eat, drink or
7.2. Conditions for safe storage, including	any incompatibilities	
Technical measures	Comply with applicable regulations.	
12/12/2016	EN (English US) SDS ID: 1600109	3/9

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Storage conditions

- : Keep container closed when not in use. Keep away from ignition sources.
- Incompatible materials : Refer t
- Storage area

0 4

- : Refer to Section 10 on Incompatible Materials.
- : Store in dry, cool, well-ventilated area.

### SECTION 8: Exposure controls/personal protection

8.1. Control parameters		
Benzene (71-43-2)		
ACGIH	ACGIH TWA (ppm)	0.5 ppm
ACGIH	ACGIH STEL (ppm)	2.5 ppm
ACGIH	Remark (ACGIH)	Leukemia
OSHA	OSHA PEL (TWA) (ppm)	10 ppm 1 ppm
OSHA	OSHA PEL (STEL) (ppm)	5 ppm (see 29 CFR 1910.1028)
OSHA	OSHA PEL (Ceiling) (ppm)	25 ppm

8.2. Exposure controls	
Appropriate engineering controls	: Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Hand protection	: Protective gloves. 29 CFR 1910.138: Hand Protection.
Eye protection	: Chemical goggles or safety glasses. Face shield. 29 CFR 1910.133: Eye and Face Protection.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection. 29 CFR 1910.134: Respiratory Protection.
Other information	: Safety shoes. 29 CFR 1910.136: Foot Protection.

## **SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and	I chemical properties
Physical state	: Liquid
Appearance	: Colorless watery liquid.
Color	: Colorless
Odor	: gasoline-like
Odor threshold	: 56 ppm (May) 180 mg/m³ (May)
рН	: No data available
Melting point	: 5.49 °C
Freezing point	: No data available
Boiling point	: 80 - 80.2 °C
Flash point	: -11 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: 74.6 mm Hg (@ 20 °C)
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 0.874 g/ml (@ 25 °C)
Molecular mass	: 78.11 g/mol
Solubility	: Water: 1.8 mg/l (at 25 °C)
Log Pow	: 2.1
Auto-ignition temperature	: 498 °C
Decomposition temperature	: No data available
Viscosity	: No data available
10/10/0010	

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

	ty, kinematic ity, dynamic	: No data available : No data available	
9.2.	Other information		
Refract	tive index	: 1.501 (@ 20 °C)	

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

10.1. Reactivity

No additional information available

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

No additional information available **10.4.** Conditions to avoid

## Keep away from heat, sparks and flame.

Reep away nom near, sparks and flame

### 10.5. Incompatible materials

Acids. Bases. Halogens. Metallic salts. Strong oxidizing agents.

### **10.6.** Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products in case of fire, see Section 5.

## **SECTION 11: Toxicological information**

### 11.1. Information on toxicological effects

#### Acute toxicity

: Oral: Harmful if swallowed.

Benzene (71-43-2)	
LD50 oral rat	810 mg/kg
LD50 dermal rabbit	> 8200 mg/kg
LC50 inhalation rat (mg/l)	44.66 mg/l/4h
ATE US (oral)	810.000 mg/kg body weight
ATE US (vapors)	44.660 mg/l/4h
ATE US (dust, mist)	44.660 mg/l/4h
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: May cause genetic defects.
Carcinogenicity	: May cause cancer.
Benzene (71-43-2)	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity, 2 - Known Human Carcinogens
In OSHA Hazard Communication Carcinogen list	Yes
In OSHA Specifically Regulated Carcinogen list	Yes
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	: May be fatal if swallowed and enters airways.

SECTION 12: Ecological info	ormation		
12.1. Toxicity			
Benzene (71-43-2)			
LC50 fish 1	10.7 - 14.7 mg/l (Exposure t	me: 96 h - Species: Pimephales promelas [flow-thro	bugh])
EC50 Daphnia 1	8.76 - 15.6 mg/l (Exposure t	me: 48 h - Species: Daphnia magna [Static])	
12/12/2016	EN (English US)	SDS ID: 1600109	5/9

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Benzene (71-43-2)	
LC50 fish 2	5.3 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 Daphnia 2	10 mg/l (Exposure time: 48 h - Species: Daphnia magna)

#### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

Benzene (71-43-2)	
BCF fish 1	3.5 - 4.4
Log Pow	2.1

### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

<b>SECTION 13: Disposal consideration</b>	IS
13.1. Waste treatment methods	
Regional legislation (waste)	: U.S RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII. U.S RCRA (Resource Conservation & Recovery Act) - Constituents for Detection Monitoring. U.S RCRA (Resource Conservation & Recovery Act) - D Series Wastes - Max Conc of Contaminants for the Tox Characteristic. U.S RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261. U.S RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents. U.S RCRA (Resource Conservation & Recovery Act) - D Series Value - Universal Treatment Standards. U.S RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring. U.S RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics.
Waste treatment methods	: Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber.
Waste disposal recommendations	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information	: Recycle the material as far as possible.

### **SECTION 14: Transport information**

### **Department of Transportation (DOT)**

In accordance with DOT	
Transport document description	: UN1114 Benzene, 3, II
UN-No.(DOT)	: UN1114
Proper Shipping Name (DOT)	: Benzene
Transport hazard class(es) (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT)	: 3 - Flammable liquid
Packing group (DOT)	: II - Medium Danger
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Special Provisions (49 CFR 172.102)	<ul> <li>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal</li></ul>

DOT Packaging Exceptions (49 CFR 173.xxx)

: 150

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

according to Federal Register / Vol. 77, No. 58 / Monday,		es and Regulations
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5L	
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L	
DOT Vessel Stowage Location	passenger vess passengers, or	trial may be stowed "on deck" or "under deck" on a cargo vessel and on a sel carrying a number of passengers limited to not more than the larger of 25 one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on sels in which the number of passengers specified in paragraph $(k)(2)(i)$ of this eded.
DOT Vessel Stowage Other	: 40 - Stow "clea	r of living quarters"
Emergency Response Guide (ERG) Number	: 130	
Other information	: No supplement	ary information available.
TDG		
No additional information available		
Transport by sea		
UN-No. (IMDG)	: 1114	
Proper Shipping Name (IMDG)	: BENZENE	
Class (IMDG)	: 3 - Flammable	iquids
Packing group (IMDG)	: II - substances	presenting medium danger
Air transport		
UN-No. (IATA)	: 1114	
Proper Shipping Name (IATA)	: Benzene	
Class (IATA)	: 3 - Flammable	Liquids
Packing group (IATA)	: II - Medium Dar	nger
<b>SECTION 15: Regulatory information</b>		
15.1. US Federal regulations		
Benzene (71-43-2)		
Listed on the United States TSCA (Toxic Subst Subject to reporting requirements of United Sta		
CERCLA RQ		10 lb received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule

SARA Section 313 - Emission Reporting

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

0.1 %

Benzene	CAS No 71-43-2	100%

### 15.2. International regulations

CANADA	
Benzene (71-43-2)	
Listed on the Canadian DSL (Domestic Sustance	s List)
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects

#### **EU-Regulations**

No additional information available

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### National regulations

 Benzene (71-43-2)

 Listed on IARC (International Agency for Research on Cancer)

 Listed on the AICS (Australian Inventory of Chemical Substances)

 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

 Listed on the Korean ECL (Existing Chemicals List)

 Listed on NZIoC (New Zealand Inventory of Chemicals)

 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

 Japanese Pollutant Release and Transfer Register Law (PRTR Law)

 Listed on the Canadian IDL (Ingredient Disclosure List)

 Listed on INSQ (Mexican national Inventory of Chemical Substances)

 Listed on Turkish inventory of chemical

#### 15.3. US State regulations

Benzene (71-43-2)	
U.S California - Proposition 65 - Carcinogens List	Yes
U.S California - Proposition 65 - Developmental Toxicity	Yes
U.S California - Proposition 65 - Reproductive Toxicity - Female	No
U.S California - Proposition 65 - Reproductive Toxicity - Male	Yes
No significant risk level (NSRL)	6.4 μg/day
State or local regulations	U.S Massachusetts - Right To Know List U.S New Jersey - Right to Know Hazardous Substance List U.S Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S Pennsylvania - RTK (Right to Know) - Special Hazardous Substances U.S Pennsylvania - RTK (Right to Know) List

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity

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

Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Asp. Tox. 1	Aspiration hazard Category 1
Carc. 1A	Carcinogenicity Category 1A
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Muta. 1B	Germ cell mutagenicity Category 1B
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H340	May cause genetic defects
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life
H412	Harmful to aquatic life with long lasting effects

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard	: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
NFPA fire hazard	: 3 - Liquids and solids that can be ignited under almost all ambient conditions.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
HMIS III Rating	
Health	: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
	* - Chronic (long-term) health effects may result from repeated overexposure
Flammability	: 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
SDS US (GHS HazCom 2012)	

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is offered solely for your consideration, investigation, and verification. It does not represent any guarantee of the properties of the product nor that the hazard precautions or procedures described are the only ones which exist. SynQuest shall not be held liable or any damage resulting from handling or from contact with the above product.