

Eyes:

Skin: Inhalation: Severe or permanent eye damage. Severe irritation and possible burns.

If sprayed, severe irritation of respiratory tract and mucous membranes; coughing, difficulty breathing.

SAFETY DATA SHEET

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BTI-055 Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, GHS & 1272/2008/EC Standards SDS Revision Date: 3/14/2017 SDS Revision: 2.0 1. PRODUCT & COMPANY IDENTIFICATION 11 Product Name TRUTEMP® TEST SOLUTION 1.2 Chemical Name: Hydrochloric Acid Solution 1.3 Synonyms NA TruTemp® Test Solution 1.4 Trade Names: 1.5 Product Use: NA Distributor's Name: 1.6 Birchwood Laboratories LLC 7900 Fuller Road, Eden Prairie, MN 55344 USA Distributor's Address: 1.7 1.8 Emergency Phone: ChemTrec +1 (800) 424-9300 / +1 (703) 527-3887 or Poison Control Center +1 (855) 281-1742 1.9 Business Phone / Fax: +1 (952) 937-7900 / +1 (952) 937-7979 2. HAZARDS IDENTIFICATION 2.1 Hazard Identification: This product is classified as a hazardous substance and as dangerous goods according to the classification criteria of [NOHSC: 1088 (2004)] and ADG Code (Australia). DANGER! CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. MAY CAUSE RESPIRATORY IRRITATION. Classification: Skin Corr. 1B, STOT SE 3 Label Elements: Hazard Statements (H): H314 - Causes severe skin burns and eye damage. H335 - May cause respiratory irritation. Precautionary Statements (P): P260 - Do not breathe dusts or mists. P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. P264 - Wash hands and exposed skin areas thoroughly with soap and warm water after handling. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P331 -IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P363 Wash contaminated clothing before reuse. P304+P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P310 - Immediately call a POISON CENTER or doctor/physician. P312 - Call a POISON CENTER or doctor/physician if you feel unwell. P321 - Specific treatment - see Section 4 of this Safety Data Sheet. P305+P351+P338 -IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P403+P233 - Store in a well-ventilated place. Keep container tightly closed. P405 - Store locked up. P501 - Dispose of contents/container to a licensed treatment, storage or disposal facility (TSDF). 2.3 Other Warnings: In the event of an exposure or medical inquiry involving this product, please contact a physician or local poison control center, who may seek advice from the U.S. manufacturer, and show them this SDS. Keep out of reach of children. 3. COMPOSITION & INGREDIENT INFORMATION EXPOSURE LIMITS IN AIR (mg/m³) ACGIH NOHSC ppm ppm ppm ES-ES-CHEMICAL NAME(S) CAS No. RTECS No. EINECS No. TLV STEL **PEAK** PEL STEL **IDLH** OTHER 7332-18-5 ZC0110000 231-791-2 60-100 NE NF NF NE NE NE NE NF WATER MW4025000 7.5 231-595-7 7-13 2 5 7 7647-01-0 5 5 5 50 HYDROCHLORIC ACID Skin Corr. 1B, STOT SE 3; H314, H335 4. FIRST AID MEASURES First Aid: DO NOT INDUCE VOMITING. Contact SafetyCall +1 (855) 281-1742 or the nearest Poison Control Center 4.1 Ingestion: or local emergency telephone number for assistance and instructions. Seek immediate medical attention. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. If product gets in the eyes, flush eyes thoroughly with copious amounts of water for at least 15 minutes, Eyes: holding eyelid(s) open to ensure complete flushing. If the eyes or face become swollen during or following use, consult a physician or emergency room immediately. Skin: Remove contaminated clothing and wash affected areas with soap and water. If discomfort persists and/or the skin reaction worsens, contact a physician immediately. Do not wear contaminated clothing until after it has been properly cleaned. Remove victim to fresh air at once. Under extreme conditions, if breathing stops, perform artificial Inhalation: respiration. Seek immediate medical attention. 4.2 Effects of Exposure: Severe burns of mouth, throat and stomach, Possible symptoms include nausea, vomiting, and abdominal Ingestion: pain. May cause damage to kidneys, resulting in blood in urine.



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BTI-055 Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, GHS & 1272/2008/EC Standards SDS Revision Date: 3/14/2017 SDS Revision: 2.0 4. FIRST AID MEASURES - cont'd 4.3 Symptoms of Overexposure: Nausea, vomiting, severe abdominal pain. Ingestion: Eyes: Redness, burning, irritation, and swelling around eyes Skin: Redness, burning, itching, rash, blistering of skin. Coughing, wheezing, swelling of throat, irritation in mucous membranes, difficulty breathing. 4.4 Acute Health Effects: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if swallowed. Causes burns. May be harmful if absorbed through skin. Chronic Health Effects: 4.5 May damage the nervous system, kidney and/or liver. 4.6 Target Organs: Eyes, skin, lungs (corrosive). 4.7 Medical Conditions Pre-existing skin, eye or respiratory disorders. HEALTH 3 Aggravated by Exposure: **FLAMMABILITY** 0 1 PHYSICAL HAZARDS PROTECTIVE EQUIPMENT В **EYES** SKIN LUNGS 5. FIREFIGHTING MEASURES Fire & Explosion Hazards: Non-flammable. May react with metals to release hydrogen gas, which can form explosive mixtures Extinguishing Methods: 5.2 Use fire-extinguishing media appropriate for surrounding materials. 5.3 Firefighting Procedures: As with any fire, firefighters should wear appropriate protective equipment including a MSHA/NIOSH approved or equivalent self-contained breathing apparatus (SCBA) and protective clothing. Fight fires as for surrounding materials. Hazardous decomposition products may be released. Thermal degradation may produce oxides of carbon, and/or nitrogen, hydrocarbons and/or derivatives. Fire should be fought from a safe distance. Keep containers cool until well after the fire is out. Use water spray to cool fire-exposed surfaces and to protect personal. Fight fire upwind. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway. 6. ACCIDENTAL RELEASE MEASURES 6.1 Spills Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment (PPE). Use safety glasses or safety goggles and face shield; use gloves and other protective clothing (e.g., apron, boots, etc.) to prevent skin contact. Small Spills: Wear appropriate protective equipment including gloves and protective eyewear. Use a non-combustible, inert material such as vermiculite or sand to soak up the product and place into a container for later disposal. Large Spills: Keep incompatible materials (e.g., acids, powdered metals) away from spill. Stay upwind and away from spill or release. Isolate immediate hazard area and keep unauthorized personnel out of area. Stop spill or release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant. Recover as much free liquid as possible and collect in acid-resistant container. Use absorbent to pick up residue. Avoid discharging liquid directly into a sewer or surface waters. 7. HANDLING & STORAGE INFORMATION Work & Hygiene Practices: Avoid breathing mists or spray. Avoid eye and skin contact. Wear protective equipment when handling product. Keep out of the reach of children. Do not eat, drink or smoke when handling this product. Wash thoroughly after handling. Do not expose to heat and flame. Use only in ventilated areas. Keep out of the reach of children. Immediately clean-up and decontaminate any spills or residues. 7.2 Storage & Handling: Use and store in a cool, dry, well-ventilated location (e.g., local exhaust ventilation, fans) away from heat and direct sunlight. Store in acid-resistant containers. Keep containers covered when not in use. Avoid temperatures above 40 °C (120 °F). Keep away from incompatible substances (See Section 10). Protect containers from physical damage. Special Precautions: 7.3 Empty containers may retain hazardous product residues. 8. EXPOSURE CONTROLS & PERSONAL PROTECTION OTHER NOHSC OSHA 8.1 Exposure Limits: ACGIH ppm (mg/m³) FS. FS. STEL ES-TWA STEL PEAK PEL STEL IDLH CHEMICAL NAME(S) TLV SODIUM HYDROXIDE (2) NA NF NF (2) NA (10)(2) NIOSH (2) (5) * ZINC OXIDE (15) (5) * NF NF (5) *NA (500)8.2 Ventilation & Engineering Use local or general exhaust ventilation to effectively remove and prevent buildup of vapors or mist generated from the Controls: handling of this product. Ensure appropriate decontamination equipment is available (e.g., sink, safety shower, eyewash station). 8.3 Respiratory Protection: In instances where vapors or sprays of this product are generated, and respiratory protection is needed, use only protection authorized by 29 CFR §1910.134, applicable U.S. State regulations, or the Canadian CAS Standard Z94.4-93 and applicable standards of Canadian Provinces, EC member

States, or Australia.



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Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, GHS & 1272/2008/EC Standards SDS Revision: 2.0 SDS Revision Date: 3/14/2017

Safety glasses with side shelds must be used when handling or using this product. A protective face shield is abor tecommended. Wear protective, Chemical-esistant glows (e.g., neoprene) when using or handling this product. A chemical resistant apron and/or protective clothing are recommended when handling or using this product. 9. PHYSICAL & CHEMICAL PROPERTIES Clear liquid 2. Obor: Purpet todor NA 2. In Apparaturous 1. Oil Apparaturous 2. Oil Purpet todor NA 2. In India Phreiferenip Part. NA 1. In India Phreiferenip Part. NA 1. Upper Internation NA NA NA 1. Upper Internation		8 1	EXPOSURE CONTROLS & PERSONAL PROTECTION – cont'd				
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2.1 Acceptance Clear liquid							
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Section 1.5 Stable	9.7						
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9.10 Realive Density: NA 11. Realive Density: 1,02 12. Solubility: Complete (water) 13. Partition Coefficient (to p = \(\tilde{\text{P}} \) NA 13. Partition Coefficient (to p = \(\tilde{\text{P}} \) NA 13. Partition Coefficient (to p = \(\tilde{\text{P}} \) NA 13. Partition Coefficient (to p = \(\tilde{\text{P}} \) NA 13. Partition Coefficient (to p = \(\tilde{\text{P}} \) NA 14. Autogration Temperature: NA 15. Decomposition Temperature: NA 15. Viscosity: Stable 15. Stability: Stable 15. Stability: Stable 15. Contract with metals such as aluminum and zinc may produce hydrogen gas. Thermal decomposition may produce Products: Products 15. Products of Entry: Viscosity: Visiosity: Vis		Limits:					
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Hezardous Decomposition Contact with metals such as aluminum and zinc may produce hydrogen gas. Thermal decomposition may produce hydrogen chloride gas.			10. STABILITY & REACTIVITY				
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Tro data aramano.	12.1	Environmental Stability:	Rapidly hydrolyzes when exposed to water. Will exhibit extensive evaporation from soil surfaces. Upon transport through the soil, hydrochloric acid will dissolve some of the soil materials (especially those with carbonate bases) and the acid will neutralize to some degree.				
12.3 Effects on Aquatic Life: No data available.	12.2	Effects on Plants & Animals:	No data available.				
	12.3	Effects on Aquatic Life:	No data available.				



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Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, GHS & 1272/2008/EC Standards SDS Revision: 2.0 SDS Revision Date: 3/14/2017

Prep	ared to USHA, ACC, ANS	SI, NOHSC, WHMIS, GHS & 12/2/2008/EC Standards SDS Revision: 2.0 SDS Revision Date: 3/14/2017
		13. DISPOSAL CONSIDERATIONS
13.1	Waste Disposal:	Review current local, state and federal laws, codes, statutes and regulations to determine current status and appropriate disposal method for the ingredients listed in Section 2. Any disposal practice must be in compliance with local, state, and federal laws and regulations. Contact the appropriate agency for specific information. Treatment, transport, storage and disposal of hazardous waste must be provided by a licensed facility or waste hauler.
13.2	Special Considerations:	U.S. EPA Hazardous Waste: D002 (Characteristic, Corrosivity)
		14. TRANSPORTATION INFORMATION
The	basic description (ID Num	ber, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional
desc	riptive information may be	e required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.
14.1	49 CFR (GND):	CONSUMER COMMODITY, ORM-D (IP VOL ≤ 1.0 L) – until 12/31/2020; or UN1789, HYDROCHLORIC ACID SOLUTION, 8, II, LTD QTY (IP VOL ≤ 1.0 L) UN1789, HYDROCHLORIC ACID SOLUTION, 8, II (IP VOL > 1.0 L)
14.2	IATA (AIR):	UN1789, HYDROCHLORIC ACID SOLUTION, 8, II, LTD QTY (IP VOL ≤ 0.1 L), PI Y841
14.3	IMDG (OCN):	UN1789, HYDROCHLORIC ACID SOLUTION, 8, II, LTD QTY (IP VOL ≤ 1.0 L)
14.4	TDGR (Canadian GND):	UN1789, HYDROCHLORIC ACID SOLUTION, 8, II, LTD QTY (IP VOL ≤ 1.0 L)
14.5	ADR/RID (EU):	UN1789, HYDROCHLORIC ACID SOLUTION, 8, II, LTD QTY (IP VOL ≤ 1.0 L)
14.6	SCT (MEXICO):	UN1789, ÁCIDO CLORHÍDRICO SOLUCIÓN, 8, II, CANTIDAD LIMITADA (VOL IP ≤ 0.5 L
14.7	ADGR (AUS):	UN1789, HYDROCHLORIC ACID SOLUTION, 8, II, LTD QTY (IP VOL ≤ 1.0 L)
		15. REGULATORY INFORMATION
15.1	SARA Reporting Requirements:	This product contains <u>Hydrochloric Acid</u> a substance subject to SARA Title III, sections 302 and 313 reporting requirements.
15.2	SARA TPQ:	Hydrochloric acid: 2,270 kg (5,000 lbs).
15.3	TSCA Inventory Status:	The components of this product are listed on the TSCA Inventory.
15.4	CERCLA Reportable Quantity:	Hydrochloric acid: 2,270 kg (5,000 lbs).
15.5	Other Federal Requirements:	NA NA
15.6	Other Canadian Regulations:	This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List. WHMIS Class E (Corrosive Material). WHMIS Class D2B (Other Toxic Effects).
15.7	State Regulatory Information:	Hydrochloric Acid is found on the following state criteria lists: Florida Toxic Substances List (FL), Massachusett Hazardous Substances List (MA), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), Pennsylvania Right-to-Know List (PA), and Washington Permissible Exposures List (WA). No other ingredients in this product, present in a concentration of 1.0% or greater, are listed on any of the following state criteria lists: California Proposition 65 (CA65), Delaware Air Quality Management List (DE), Florida Toxi Substances List (FL), Massachusetts Hazardous Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), New York Hazardous Substance List (NY), Pennsylvania Right-to-Know List (PA), Washington Permissible Exposures List (WA), Wisconsin Hazardous Substances List (WI).
15.8	Other Requirements:	NA NA



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		16. OTHER INF	ORMATION		
16.1	Other Information:	DANGER! CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. MAY CAUSE RESPIRATORY IRRITATION. Do not breathe dusts or mists. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash hands and exposed skin areas thoroughly with soap and warm water after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician if you feel unwell. Specific treatment – see Section 4 of this Safety Data Sheet. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store in a well-ventilated place. Keep container tightly closed. Store locked up. KEEP LOCKED UP AND OUT OF REACH OF CHILDREN.			
16.2	Terms & Definitions:	See last page of this Safety Data Sheet.			
16.3	Disclaimer:	This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & Birchwood Technologies' knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.			
16.4	Prepared for:	Birchwood Technologies 7900 Fuller Road Eden Prairie, MN 55344 USA Tel: +1 (952) 937-7900 Fax: +1 (952) 937-7979 http://www.birchwoodtechnologies.com	BIRCHWOOD® TECHNOLOGIES		
16.5	Prepared by:	ShipMate, Inc. P.O. Box 787 Sisters, Oregon 97759-0787 USA Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 http://www.shipmate.com	ShipMate* Dangerous Goods Training & Consulting		



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SDS Revision: 2.0

SDS Revision Date: 3/14/2017

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

CAS No.	Chemical Abstract Service Number
RTECS No.	Registry of Toxic Effects of Chemical Substances Number
EINECS No.	European Inventory of Existing Commercial Chemical Substances Number

EXPOSURE LIMITS IN AIR:

ACGIH	American Conference on Governmental Industrial Hygienists
IDLH	Immediately Dangerous to Life and Health
NOHSC	National Occupational Health and Safety Commission (Australia)
OSHA	U.S. Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average

FIRST AID MEASURES:

CPR	Cardiopulmonary resuscitation - method in which a person whose heart has
	stopped receives manual chest compressions and breathing to circulate blood
	and provide oxygen to the body.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

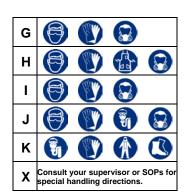
HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard	
1	Slight Hazard	
2	Moderate Hazard	
3	Severe Hazard	
4	Extreme Hazard	



PERSONAL PROTECTION RATINGS:

Α				
В				
С			THE STATE OF THE S	
D	(F)	(ELL)	THE THE	
Е				
F			THE SECOND	





OTHER STANDARD ABBREVIATIONS:

Carc	Carcinogenic
Irrit	Irritant
NA	Not Available
NR	No Results
ND	Not Determined
NE	Not Established
NF	Not Found
SCBA	Self-Contained Breathing Apparatus
Sens	Sensitization
STOT RE	Specific Target Organ Toxicity - Repeat Exposure
STOT SE	Specific Target Organ Toxicity – Single Exposure

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILI	FLAMMABILITY LIMITS IN AIR:		
Autoignition Minimum temperature required to initiate combustion in air with no other source Temperature of ignition			
LEL	Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source		
UEL	Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source		

HAZARD RATINGS:

0	Minimal Hazard	FLAMMABILITY	
1	Slight Hazard	\	
2	Moderate Hazard	REACTIVITY	
3	Severe Hazard	1	
4	Extreme Hazard		
ACD	Acidic		
ALK	Alkaline		
COR	Corrosive	/ \ \ \ \ \	
W	Use No Water	HEALTH	
ох	Oxidizer	SPECIAL	
TREFOIL	Radioactive	PRECAUTIONS	

TOXICOLOGICAL INFORMATION:

Lethal Dose (solids & liquids) which kills 50% of the exposed anima LC 50 Lethal concentration (gases) which kills 50% of the exposed anima ppm Concentration expressed in parts of material per million parts TD 10 Lowest dose to cause a symptom TCLO Lowest concentration to cause a symptom TD 10, LD 10, & LD 0 TD 10, LD 10, & LD 0 TD 10, LD 10, S LD 0 LOWEST CONCENTRATION TO CAUSE lethal or toxic effects	als
ppm Concentration expressed in parts of material per million parts TD _{Io} Lowest dose to cause a symptom TCLo Lowest concentration to cause a symptom	
TD _{Io} Lowest dose to cause a symptom TCLo Lowest concentration to cause a symptom	ı
TCLo Lowest concentration to cause a symptom	
TD _{lo} , LD _{lo} , & LD _o or Lowest dose (or concentration) to cause lethal or toxic effects	
TC, TC _o , LC _{io} , & LC _o	
IARC International Agency for Research on Cancer	
NTP National Toxicology Program	
RTECS Registry of Toxic Effects of Chemical Substances	
BCF Bioconcentration Factor	
TL _m Median threshold limit	
log K _{ow} or log K _{oc} Coefficient of Oil/Water Distribution	

REGULATORY INFORMATION:

WHMIS	Canadian Workplace Hazardous Material Information System				
DOT	U.S. Department of Transportation				
TC	Transport Canada				
EPA	U.S. Environmental Protection Agency				
DSL	Canadian Domestic Substance List				
NDSL	Canadian Non-Domestic Substance List				
PSL	Canadian Priority Substances List				
TSCA	U.S. Toxic Substance Control Act				
EU	European Union (European Union Directive 67/548/EEC)				
WGK	Wassergefährdungsklassen (German Water Hazard Class)				

WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:

0	®		②	Θ	(%)		
Class A	Class B	Class C	Class D1	Class D2	Class D3	Class E	Class F
Compressed	Flammable	Oxidizing	Toxic	Irritation	Infectious	Corrosive	Reactive

CLP/GHS (1272/2008/EC) PICTOGRAMS:

	③		\Diamond			\Leftrightarrow		*
GHS01	GHS02	GHS03	GHS04	GHS05	GHS06	GHS07	GHS08	GHS09
Explosive	Flammable	Oxidizer	Pressurized	Corrosive	Toxic	Harmful Irritating	Health Hazard	Environment