

**Project :**

***“Hot Dip Zinc Galvanizing Facility”,  
Oryahovo, BULGARIA.***

# **Environmental Impact Assessment**

**APPENDICES**

**June 8, 2007.**

**Sofia**

# Appendix 1.

## Project Location



## **Appendix 2.1.**

### **Legislation on Environment Protection.**

1. The Environment Protection Act
2. The Protection from the Adverse Effects of Chemical Substances and Preparations Act
3. The Water Act
4. The Waste Management Act
5. The Clean Air Act
6. The Protection of Water and Soil from Pollution Act
7. The Agricultural-Land Protection Act
8. The Biodiversity Act
9. The Medicinal Plants Act
10. The Genetically-Modified Organisms Act
11. The Protected Areas Act
12. The Protection against Noise in the Environment Act

## **Appendix 2.2.**

### **National Environmental Quality Standards (NEQS)**

1. Regulations No. 1 on groundwater exploration, use and protection.
2. Regulations No. 2 on the protection of waters from pollution by nitrates from agricultural sources.
3. Regulations No. 3 on the conditions and procedure applicable to the study, design, establishment and operation of sanitary and guarded areas around water sources and facilities within the system of water supply for drinking and household purposes and around mineral-water sources used for curative, preventive, drinking and hygiene purposes.
4. Regulations No. 6 on the emission norms applicable to the permitted content of harmful and dangerous substances in wastewater released in water bodies.
5. Regulations No. 7 on the conditions and procedure applicable to the releasing of industrial wastewater in municipal sewer systems.
6. Regulations No. 8 on the quality of coastal marine waters.
7. Regulations No. 9 on the quality of water designed for drinking and household purposes.
8. Regulations No. 12 laying down the quality requirements applicable to surface waters in water supply designed for drinking and household purposes.
9. Regulations No. 3 on waste classification (issued by the Minister of Environment and Waters and the Minister of Health).
10. Regulations laying down the procedure applicable to the recovery of wastewater treatment sludge through application within agriculture.
11. Regulations No. 1 laying down the norms applicable to the permitted emissions of harmful substances (pollutants) released in the air from sites and activities with static emission sources.
12. Regulations No. 1 laying down the conditions and the procedure applicable to the establishing of temporary norms on the emission of harmful substances released in the air from static operational sites
13. Regulations No. 2 laying down the norms on permitted emissions (concentrations in exhaust gases) of harmful substances released in the air from static sources.
14. Regulations No. 7 laying down the norms on permitted emissions of volatile organic compounds released in the air as a result of the use of solvents in certain installations.

15. Regulations No. 9 laying down the norms on the content of sulphur dioxide, nitrogen dioxide, fine dust particles and lead in the air.

16. Regulations No. 14 laying down the norms on permitted limit concentrations of harmful substances in the air in settlements.

17. Regulations No. 3 laying down the norms on the permitted content of harmful substances in the soil.

18. Order laying down the fishing conditions and the periods during which the catching of fish and other water organisms is prohibited in view of the breeding seasons of different species, in order to ensure biodiversity and establish optimal conditions facilitating the natural reproduction of such species in the waters of the Black Sea, the Danube and the inland water bodies.

19. Regulations laying down the manner of development of protected-area management plans.

20. Regulations No. 6 on the environment noise properties evidencing the degree of discomfort in different parts of the day, the limit noise levels in the environment, and the methods of evaluating noise properties and the harmful effects of noise on human health.

## **Appendix 2.3.**

### **Environmental Non-Governmental Organizations (NGOs).**

1. European Integration and Information
2. The Association of Not-For-Profit Organizations from Small Settlements
3. The Bulgarian Association of Development Agencies and Business Centres /BARDA/
4. The Bulgarian Association for the Protection of Birds
5. The Economy 2000 Club
6. The National Association of Municipalities in the Republic of Bulgaria (NSORB)
7. The Ecoglasnost National Association
8. The Green Future Independent Club of Experts
9. The National Association for Environmentally-Friendly Agriculture (Ecozem)
10. The Ecosouthwest Regional Movement
11. The Green Balkans Not-For-Profit Association
10. The Environmental Academy Foundation
11. The Ecoforum Association

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## **APPENDIX 3.1.**

### **DETAILED DESCRIPTION & SPECIFICATION OF HOT DIP ZINC GALVANIZING EQUIPMENT**

- **Caustic and Caustic Rinse Tanks**

The tanks are constructed of 1/4" mild steel plate and are reinforced at the lip with steel channel and at the girth with angle. In addition, the lower portion of the sidewall and the bottom are reinforced with T bar and/or I beam.

The tanks are heated by immersion tube burners fabricated of schedule 40 steel pipe and fired with atmospheric type burners. Temperature control of the solution is manual, and the necessary burners are furnished. The stacks extend approximately one foot above the tank lip. After fabrication, the tanks are painted with an epoxy coating suitable for the operating environment.



- **Acid, Acid Rinse and Flux Tanks**

The tanks are constructed of 1/4" mild steel plate and are reinforced at the lip with steel channel and at the girth with angle. In addition, the lower portion of the sidewall and the bottom are reinforced with T bar and/or I beam.

The tanks are then lined with 1" welded polypropylene copolymer sheet. The tank liner bottom is in turn covered with acid brick. After fabrication, the tanks are painted with an epoxy coating suitable for the operating environment.



Free standing flux tanks constructed of structural steel encapsulated with polypropylene sheet are also available.

- **ACID & FLUX TANK HEATING**

GTI will supply its "Hot Stick" heating system for heating the flux or occasional warming of the acid tanks in the Plant. The GTI hot stick carbon burner is a stoichiometric or "on ratio" burner designed to heat a liquid bath by discharging the products of combustion directly into the bath. The overall efficiency is estimated to be 85% so that virtually all the heat released is transferred to the liquid. The agitation caused by the release of combustion gases serves to increase the pickling rate that allows operation at lower temperatures if desired. Temperature control is manual.

The system GTI proposes to supply consists of:

- a) 4 Hot Sticks complete with triangular polypropylene tank corner holder, stainless steel support clamp, mixing head, and hoses for air and gas supply to the stick (approximately 10 ft. long).
- b) Central blower system consisting of the gas safety train, high volume/low pressure lobe type blower, and drive motor. The system will support from 1 to 5 sticks, and the drive motor is 25 horsepower.

- **TANK PIERS & TANK BOTTOM LINING**

Local acid brick will be purchased by the Plant for the tank support piers and bottom lining. This will also reduce freight cost.

- **Galvanizing Furnace & Kettle**

Furnace design & kettle life are closely related, and this comparison will outline what GTI recommends & why we make these recommendations. Kettle life depends entirely on the amount of heat transferred through the kettle wall and the design of the furnace and it's ability to transfer the heat efficiently with minimum damage to the kettle. The furnace that is most efficient & produces the best kettle life is the one that produces the most even radiation of heat onto the outer surface of the kettle wall. In this way, the inner kettle wall is kept at the lowest most uniform temperature, and erosion of the wall is minimized.



### ***End fired burner***

End fired furnaces have been in use for many years. They are excellent choices for specific plant applications with moderate production rates, and they are easy to run and maintain. They are also less expensive to build. However, end fired furnaces must be carefully designed and the kettle wall must be protected with insulation for the first few feet from the burner or rapid erosion of the kettle inner wall will occur. The major portion of heat transfer through the kettle wall occurs in the next several feet (where the flame is radiant).

This can easily be seen during meltdown of longer end fired furnaces when the zinc in this region of the kettle is the first to melt.

For the highest production rate applications, a well designed side fired "flat flame" furnace is a good choice. No other furnace design, excepting electric furnaces, allows the even radiation of heat through the kettle sidewall. Each burner is positioned at the proper spacing from its neighbour so that the kettle will not be overheated, and if the kettle is properly sized for the desired production rate, kettle life will be much improved over industry average.

In summary, both furnace designs have their place in the industry. All modern burner designs will burn fuel efficiently, but burner combustion efficiency has little to do with the efficient transfer of heat through the kettle wall. It is the job of the furnace designer to evaluate the needs of the process, and help the operator to choose what is best for his company.

GTI builds all commonly used furnace designs, so we have no particular axe to grind, and our advice is based on our desire to reduce your overall cost as much as possible.

### ***Flat flame burners***



A third furnace design that is much less expensive uses multiple small burners along both sides of the furnace near the kettle bottom. These small burners are normally aspirated (drawing their own air supply through a venturi) and do not require a combustion blower. The control system is also quite simple, but electronic flame safeguards are not practical because of the large number of burners. Another advantage of this furnace system is that it will continue to run without electrical

power. The fuel efficiency of this type furnace is about 7 - 10% less than the powered furnaces described above.

**SETTING** . The setting design is based on GTI's experience over many years and approaching 200 furnaces of this type. The steel shell panel sections are lined with mineral wool and ceramic wool blanket insulation which results in a low wall temperature and low heat loss. Both the dross area and bath line are protected with insulation, and firebrick braces transmit hydraulic load to the pit foundation. Removable top panels make rapid kettle change possible, and these top panels are protected by a steel plate work top. The steel worktop & braces are fabricated by client to GTI drawings in order to reduce freight costs. The Plant will also purchase local firebrick & mortar for the kettle pad & braces.

**COMBUSTION SYSTEM** . High velocity burners are used to obtain good heat transfer through the kettle wall combined with cost savings in burner equipment and controls. The proper ratio of fuel and air is assured by the use of a proportionate valve which meters fuel gas in the correct proportion to air at all demand levels. GTI's experience has shown that this system is the best balance between energy efficiency and maintenance requirements.

***FUEL GAS*** is supplied to the furnace by a safety valve train designed in accordance with NFPA standards, and combustion air is provided by a blower equipped with a special filter to remove particulate matter which would cause burner maintenance problems.

The furnace is rated at 4,000,000 BTU/Hr, and is fired by 4 Eclipse TJ Series burners having a capacity of 1,000,000 BTU/Hr each. Furnace efficiency approaches theoretical maximum of 65%, and fuel gas flow rate is 4,000 cubic feet per hour at high fire. The average gas flow rate is approximately 50% of this value, and the rate drops to approximately 10% at idle with insulated covers in place. Theoretical production rate calculated using a surface heat loss of 5000 BTU/Hr-Sq Ft is 16,000 pounds per hour. Actual production rate is usually approximately 80-85% of this value

All combustion piping on the furnace, and the piping associated with the combustion safety and control valve train will be prefabricated. This technique reduces installation time, and greatly reduces the need for skilled labor at client's plant. Piping is done according to the national fuel gas code, but client must determine if any local codes impose other requirements. Some piping (control room to furnace) will be fabricated on site by the Plant's personnel under GTI's supervision.

***CONTROL SYSTEM.*** Temperature control is accomplished by a one zone true proportioning solid state controller with digital readout of both setpoint and process temperature. The controller output to a variable frequency drive modulates the combustion air output. A demand for heat causes an increase in combustion air pressure which is transmitted to the fuel gas control valve. The main controller provides both low temperature alarm and high temperature shutdown, and a separate instrument provides an independent means of shutdown in case of high temperature. Bath temperature is sensed by two thermocouples encased in thermowells made of

kettle steel, and each thermocouple has a sensing element to detect flooding of the thermowell. A zinc level sensing system is furnished for use when the kettle is unattended, and the control panel provides contacts for a multipoint telephone alarm system.

**FLUE AND STACK** . The flue trench is lined with local refractory purchased by you. The stack will be fabricated by the Plant to GTI drawings in order to save freight cost. A stack damper is included by GTI.

GTI will supply the galvanizing kettle for the above furnace. The kettle would be fabricated of special alloy steel with 2" walls and 2" bottom.

- **Centrifuge System**

GTI 's "SpinShield" centrifuge system for small parts galvanizing is based on our patented automated centrifuge which is hydraulic powered and computer controlled.

Work to be galvanized is placed in a 24" diameter basket which is strengthened by a 4" structural tubing center post. This post serves as the driving means when the basket is placed in the centrifuge, and allows zinc to flow to the work from the center as well as the outside of the basket.

GTI will furnish drawings of various basket designs to suit different types of work. Work up to 30" long can be done, and work loads vary between 50 and 150 pounds depending on the type of product.

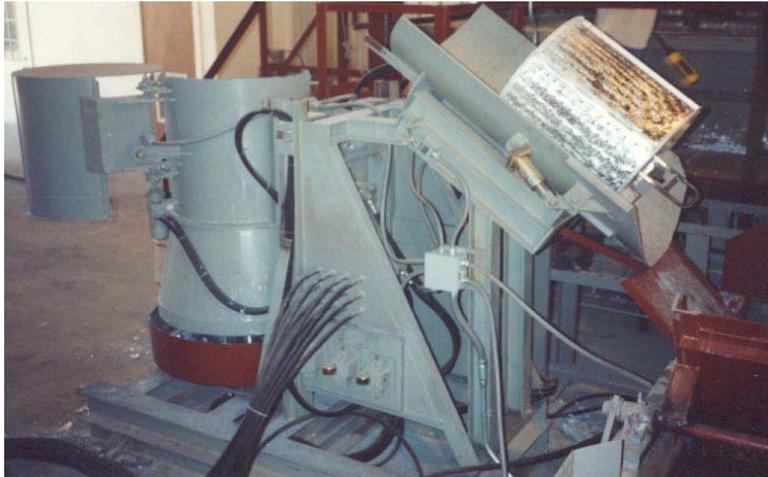


After galvanizing, the basket is placed in the centrifuge spin chamber, and the operator presses the cycle start pushbutton. The load is then automatically spun, dumped to the quench tank, quenched and dumped to the sorting table, and the basket returned for reloading. The timing of each step is controlled by a programmable computer which operates solenoid valves to actuate hydraulic components. The rapid acceleration and braking of the hydraulic drive produces very high quality work. Cycle times of 2 to 3 minutes with spin times of a few seconds are commonly achieved.

## **Centrifuge system components :**

### **a) "Spin-Shield" Model "C" Centrifuge**

Power for the centrifuge is provided by a hydraulic unit driven by a 30 Hp 480/240/3/60 TEFC motor. The drive motor is powered by an accumulator that is charged by a high pressure pump while the cylinders and other actuators are powered by a lower pressure pump system. All hydraulic components are from major manufacturers so that parts and service are readily available. The unit is served by an 80 gallon reservoir, and cooling water is usually not required.



The centrifuge unit is constructed of 3/8" plate, and the base of 10" I beam. It is strongly braced, and designed for heavy service. The operation of the centrifuge is controlled by a programmable controller, and automatic or manual control can be selected. The panel may be mounted at the operating position, or a remote control panel may be used.

### **b) Quench Tank**

A quench tank 7 feet long by 4 feet wide by 4 feet deep with a hydraulically operated catch basket will be furnished. This tank is positioned under the Spin-Shield dump chute and receives the galvanized parts as they are ejected from the spinning basket. At the proper time, the cooled parts are dumped onto the sorting table.

### **c) Sorting Table**

A solidly constructed metal table is furnished to receive the cooled parts, and quality control inspection is done on this table. If part quality is suitable, the finished parts are manually raked into tote bins or other containers for shipment.



#### **d) Basket Return System**

After galvanizing, the spinning basket is dumped onto a conveyor by the automatic Spin-Shield centrifuge. The design of the conveyor which returns the empty basket to the loading point must be integrated into the plant design in order to have the most efficient operation. The conveyor may be a driven chain or a free roller depending on the situation, and a firm price will be quoted after study of your plant.

#### **e) Manual Centrifuge Units**

For operations where automation is not desired, we offer the Spin-Shield centrifuge in manual configuration. In this configuration, the basket is placed in the centrifuge by the operator who then activates the cycle start button. The centrifuge door closes, the load spins, and the door opens. The work basket is withdrawn manually with the plant hoist. This unit is less expensive, and still gives the advantage of rapid acceleration and deceleration which results in high work quality.

GTI also offer air powered suspended centrifuge units which are powerful, reliable and easily maintained. This type of centrifuge is especially suited to larger loads and larger work pieces.

#### **f) Installation & Start-up**

The equipment is prefabricated and designed for quick installation by relatively unskilled personnel. Our experience has shown that installation by customer's plant maintenance personnel under GTI supervision results in the lowest cost to the customer and practical experience for customer's staff. GTI provide up to two weeks of supervision and training. If this method is not practical GTI can provide a turnkey installation.

- **PRE-HEATER / DRIER**

GTI will supply a work pre-heater / drier with conveyor. The pre-heater will be constructed in a pit located between the pickle area & the kettle, and the pit layout drawing will be furnished by GTI.

Work will be suspended from a universal carrier beam, pickled, and the carrier beam will be placed in the drier by bridge crane. The drier door will close, and the carrier beam will be moved through the drier by a chain conveyor driven by synchronized electric motors.

Movement of the conveyor is controlled by the kettle operator, and after a load is removed from the drier for galvanizing, the conveyor indexes one position forward. The drier is then ready for the next load to be placed inside. The drier is sized to allow four carrier beams of work to be preheated at one time. The operating temperature of the drier is approximately 350F.

The floor and sidewalls of the pit will be covered with one course of firebrick (which the Plant will purchase locally) to protect the concrete, and the upper part of the drier will be constructed of insulated steel panels similar to the galvanizing furnace described above (with less insulation because of the lower operating temperature). Hot air is provided to the pre-heater by two air heating burners through plenum chambers mounted on the drier roof. Air is re-circulated within the drier by a blower near the burners. Temperature is sensed and controlled, and combustion safety is monitored in the same manner as the galvanizing furnace. The combustion piping will be prefabricated as much as practical.

- **Dross Clamshell**



The dross clamshell is designed for ease of operation, and will reduce the time necessary to properly dross your kettle. The clamshell is constructed of steel, and the bucket is easily replaced.

Plant air is controlled by a valve mounted on the operator handle, and air cylinders mounted on a steel platform provide power for closure of the clamshell. This design allows for use over kettles with minimum headroom. The clamshell is designed for

kettles of any depth or width, and can be changed if your kettle size changes in later years.

- **Sludge Clamshell**

The sludge clamshell is designed for ease of operation, and will reduce the time necessary to properly clean your acid tanks. The clamshell is constructed of steel and polypropylene, and the bucket is easily replaced.

Plant air is controlled by a valve mounted on the operator handle, and air cylinders mounted on a steel platform provide power for closure of the clamshell. This design allows for use over tanks with minimum headroom. The clamshell is designed for tanks of any depth or width, and can be changed if your tank size changes in later years.

## Appendix 4.1.

### List of Important Reserves and Protected Localities within the Republic of Bulgaria

| Name                               | Municipality/Territory                   | Name                        | Municipality/Territory        |
|------------------------------------|--|-----------------------------|-------------------------------|
| 1. Silkosnya                       | Village of Kosti                         | 31. Bukaka                  | Shoumen                       |
| 2. Parangalitsa                    | Blagoevgrad                              | 32. Beli lom                | Tsar Kaloyan, Vetovo          |
| 3. Bayuvi dupki,<br>Dzhindzhiritsa | Razlog                                   | 33. Tsarnata reka           | Village of Sazhdenik          |
| 4. Bistrishko<br>branishte         | Vitosha National Park                    | 34. Valchi dol              | Village of Boynik             |
| 5. Torfeno<br>branishte            | Vitosha National Park                    | 35. Stara reka              | Karlovo                       |
| 6. Kaliakra                        | Balgarevo                                | 36. Vitanovo                | Malko Tarnovo                 |
| 7. Boatin                          | Village of Cherni vit                    | 37. Kitka                   | Kitka Isle                    |
| 8. Tsarichina                      | Village of Ribaritsa                     | 38. Vrachanski<br>karet     | Vratsa                        |
| 9. Tisata                          | Kresna                                   | 39. Sev. Dzhendem           | Apriltsi                      |
| 10. Dupkata                        | Village of Fotinovo                      | 40. Kutelka                 | Sliven                        |
| 11. Kamchia                        | Village of N. Oryahovo                   | 41. Orlitsata               | Village of Medven             |
| 12. Gorna<br>topchia               | Village of Konevets                      | 42. Kamenshtitsa            | Village of Enina              |
| 13. Ali botush                     | Gotse Delchev<br>Katuntsi                | 43. Leshnitsa               | Village of Yasenovo           |
| 14. Dzhendema                      | Karlovo                                  | 44. Orelyak                 | Gotse Delchev                 |
| 15. Uzunbodzhak                    | Village of Kosti                         | 45. Ibar                    | Kostenets                     |
| 16. Soskovcheto                    | Smolyan                                  | 46. Sokolata                | Village of Igralishte         |
| 17. Skakavitsa                     | Village of Sapareva<br>banya             | 47. Rilomanastirska<br>gora | Rila                          |
| 18. Beglika/V.<br>Kolarov          | Batak                                    | 48. Kozya stena             | Village of Chiflik,<br>Lovech |
| 19. Elenova gora                   | Village of Sahryane                      | 49. Kongura                 | Petrich                       |
| 20. Kupena                         | Peshtera                                 | 50. Sredoka                 | Malko Tarnovo                 |
| 21. Chervenata<br>stena            | Village of Bachkovo                      | 51. Tisovitsa               | Village of Balgari            |
| 22. Mantaritsa                     | Rakitovo                                 | 52. Central Rila<br>Reserve | Samokov                       |
| 23. Gornata<br>koriya              | Berkovitsa                               | 53. Ropotamo                | Tsarevo                       |
| 24. Byala krava                    | Village of Kostel                        | 54. Yulen                   | Bansko                        |
| 25. Kastrakliy                     | Village of Borino                        | 55. Milka                   | Belene Isle                   |
| 26. Kazanite                       | Village of Mugla                         |                             |                               |
| 27. Chuprene                       | Village of Chuprene                      |                             |                               |
| 28. Steneto                        | Village of Cherni osam                   |                             |                               |
| 29. Sokolna                        | Village of Skobelevo,<br>Village of Asen |                             |                               |

## Appendix 4.2.

### Maintained Reserves within the Republic of Bulgaria

| Name                 | Municipality/Territory   | Name                          | Municipality/Territory  |
|----------------------|--------------------------|-------------------------------|-------------------------|
| 1. Patleyna          | Veliki Preslav           | 19. Ostritsa                  | Pernik                  |
| 2. Dervisha          | Veliki Preslav           | 20. Pyasachnata lilia         | Sozopol                 |
| 3. Chamdzha          | Village of Hristo Danovo | 21. Konski dol                | Village of Satovcha     |
| 4. Izgoryaloto gyune | Krichim                  | 22. Velyov vir (water lilies) | Sozopol                 |
| 5. Gabra             | Village of Tsarvaritsa   | 23. Tamna gora                | Village of Kovachevitsa |
| 6. Kazal Cerpa       | Village of Zhenda        | 24. Uchilishtna gora          | Village of Bozhenitsa   |
| 7. Ardaclaka         | Village of Bornitsi      | 25. Boraka                    | Village of Sarnitsa     |
| 8. Srebarna          | Village of Srebarna      | 26. Varbov dol                | Village of Asparuhovo   |
| 9. Borovets          | Village of Raven         | 27. Kirov dol                 | Dolen chiflik           |
| 10. Chamlaka         | Momchilgrad              | 28. Kalfata                   | Village of Polyatsite   |
| 11. Shabanitsa       | Village of Trigrad       | 29. Savov chair               | Village of Kladni dyal  |
| 12. Valchi prohod    | Village of Golitsa       | 30. Haydushki chukar          | Village of Buynovtsi    |
| 13. Momchilovski dol | Village of Momchilovtsi  | 31. Bogdan                    | Koprivshitsa            |
| 14. Amzovo           | Village of Smolyan       | 32. Baltata                   | Village of Obrochishte  |
| 15. Sini bryag       | Village of Izgrev        | 33. Atanasovsko ezero         | Bourgas                 |
| 16. Momin grad       | Village of Byala reka    | 34. Persinski blata           | Belene Isle             |
| 17. Balabana         | Elhovo                   | 35. Ibisha                    | Village of D. Tsibar    |
| 18. Dolna topchia    | Elhovo                   |                               |                         |

## Appendix 4.3.

### Flora and Fauna of the Oriahovo Region

**Appendix 4.3.1.** Vegetation of the Oriahovo Region. Protected plant species under the Biodiversity Act in the Floristic Area of the Danube Plains

| Protected plant species found only in the Danube Plains Floristic Area  | Protected plant species found also in other floristic areas within the Republic of Bulgaria   |
|---|---|
| <p> <i>Convolvulus althaeoides</i><br/> <i>Eleocharis carniolica</i><br/> <i>Glycyrrhiza glabra</i><br/> <i>Salvia scabiosifolia</i> </p> | <p> <i>Adonis vologensis</i><br/> <i>Astragalus corniculatus</i><br/> <i>A. dasyanthus</i><br/> <i>Caragana frutex</i><br/> <i>Centaurea arenaria</i><br/> <i>Chamaecytisus kovacevii</i><br/> <i>Dianthus pontederiae</i><br/> <i>D. nardiformis</i><br/> <i>Ephedra distachya</i><br/> <i>Euphorbia lucida</i><br/> <i>Goniolimon tataricum</i><br/> <i>G. collinum</i><br/> <i>Hedysarum tataricum</i><br/> <i>Isolepis supina</i><br/> <i>Limonium latifolium</i><br/> <i>Lindemia procumbens</i><br/> <i>Marsilea quadrifolia</i><br/> <i>Nymphaea alba</i><br/> <i>Nepeta parviflora</i><br/> <i>N. ucrainica</i><br/> <i>Nuphar lutea</i><br/> <i>Nymphoides peltata</i><br/> <i>Paeonia tenuifolia</i><br/> <i>Poa palustris</i><br/> <i>Potamogeton trichoides</i><br/> <i>Pulsatilla pratensis</i><br/> <i>Ruta graveolens</i><br/> <i>Salvinia natans</i><br/> <i>Stratiotes aloides</i><br/> <i>Sedum stefco</i> </p> |

### Appendix 4.3.2. Fauna in the Project Area

| Animal complexes    | Families              | Ecosystem |
|---------------------|-----------------------|-----------|
| <b>Water birds:</b> |                       |           |
|                     | Podiceps, griseigena  | Water     |
|                     | Podiceps, ruficollis  | Water     |
|                     | Palacrocorax, carbo-m | Water     |
|                     | Palacrocorax pygmeus  | Water     |
|                     | Ardea cinerea         | Water     |
|                     | Ardea purpurea        | Water     |
|                     | Egretta alba          | Water     |
|                     | Egretta garzetta      | Water     |
|                     | Ardoela ralloides     | Water     |
|                     | Nycticorax nycticorax | Water     |
|                     | Platelea leucorodia   | Water     |
|                     | Plegadis falcinellus  | Water     |
|                     | Cygnus olor           | Water     |
|                     | Cygnus cygnus         | Water     |
|                     | Anser anser           | Water     |
|                     | Anser albifrons       | Water     |
|                     | Branta ruficollis     | Water     |
|                     | Tadorna tadorna       | Water     |
|                     | Anas platyrhynchos    | Water     |
|                     | Anas strepera         | Water     |
|                     | Anas penelope         | Water     |
|                     | Anas crecca           | Water     |
|                     | Anas querque          | Water     |
|                     | Anas acuta            | Water     |
|                     | Anas clypeata         | Water     |
|                     | Aythya nyroca         | Water     |
|                     | Bucephala clangula    | Water     |
|                     | Mergus menganser      | Water     |
|                     | Fulica atra           | Water     |
|                     | Gallinula chloropus   | Water     |
|                     | Larus ridibundus      | Water     |
|                     | Larus argentatus      | Water     |
|                     |                       | Water     |

| <b>Animal complexes</b>           | <b>Families</b>                           | <b>Ecosystem</b>                    |
|-----------------------------------|---|-------------------------------------|
|                                   | Larus canus                               |                                     |
| <b>Insects:</b>                   |   |                                     |
|                                   | Colleoptera                               | Wheat                               |
|                                   | Coccinella septempunctata (L)             | Wheat                               |
|                                   | Adonia variegata                          | Wheat                               |
|                                   | Propyleae quatordecim punctata (L)        | Wheat                               |
|                                   | Colleoptera                               | Alfalfa                             |
|                                   | Scymnus sp.                               | Alfalfa                             |
|                                   | Coccinella septempunctata (L)             | Alfalfa                             |
|                                   | Adonia variegata                          | Alfalfa                             |
|                                   | Propyleae quatordecim mpunctata           | Alfalfa                             |
|                                   | Subcoccinella vigintiquatiquatuorpunctata | Alfalfa                             |
|                                   | Semiadalia undecimnotata                  | Alfalfa                             |
|                                   | Coccinella quatordecimpustulata           | Alfalfa                             |
|                                   | Tea vigintiduopunctata                    | Alfalfa                             |
|                                   | Adalia desempunctata                      | Alfalfa                             |
|                                   | Tytthaspis sedemicimpunctata              | Alfalfa                             |
|                                   | Hippodamia tredesimpunctata               | Alfalfa                             |
|                                   | Carabidae                                 | Wheat, barley, sunflower, corn, oak |
|                                   | Carabus convexus                          | Oak                                 |
|                                   | Carabus montisagus                        | Oak                                 |
|                                   | Benbidion spp.                            | Wheat                               |
|                                   | Harpalus (Psuedophonis) rufipes           | Corn                                |
|                                   | Harpalus distinguenidus                   | Wheat                               |
|                                   | Poecillus cuprenus                        | Wheat                               |
|                                   | Platinus dorsalis                         | Wheat                               |
|                                   | Brachinus crepitans                       | Wheat                               |
| <b>Carnivorous game and birds</b> |   |                                     |
|                                   | Vulpes rulpes                             | Woods                               |
|                                   | Corvus corax                              | Woods                               |
|                                   | Ciconia ciconia                           |                                     |

| <b>Animal complexes</b>     | <b>Families</b>   | <b>Ecosystem</b>                 |
|-----------------------------|-------------------|----------------------------------|
| <b>Synanthropic rodents</b> |                   |                                  |
|                             | Rattus norvegicus | Towns/villages<br>Woods<br>Grass |
|                             | Rattus rattus     | Towns/villages<br>Woods<br>Grass |
|                             | Mus musculus      | Towns/villages<br>Woods<br>Grass |

## APPENDIX 5.1.

### Containers for Material Handling and Storage of Hazardous Materials - “Hazmat Containers” (selected types, characteristics and manufacturers) .

#### Appendix 5.1.1. WasteAway™ Container

A cost saving hazmat collapsible container from “WasteAway” type will be utilized for storage & transportation of solid hazardous waste.

All Waste Away containers are **UN certified for Packaging Group I, II and III hazardous materials** and are acceptable for incineration.

**Capacity:**

27 cubic feet (one cubic yard)

Up to: 2,500 lbs.

**Features:**

The **WasteAway Classic** container has stiffener inserts for self-support and a full open top with a web tie closure. The containers are delivered and stored folded to save space. A 6.0 mil. Liner is included. Other liner options are available.

The **WasteAway Plus** container features triple wall corrugated stiffeners creating a more rigid container for easy double stacking. The Plus has an added single panel protective top cover, and four tabs for securing the container to a pallet.

*The Super WasteAway container adds a four panel protective top cover in addition to the many Classic and Plus features, and has Packaging Group I UN Certification*



Manufacturer:  
**B.A.G. Corp.**  
 11510 Data Drive  
 Dallas, TX 75218 USA  
 214-340-7060 Tel  
 800-331-9200 Tel  
 214-340-4598 Fax

**Appendix 5.1.2. Polyethylene Closed Head Drums**

These lightweight but rugged drums are the economical answer to corrosive liquid packaging.

***Construction:***

Manufactured from high density, high molecular weight polyethylene

***Design:***

- **UN/DOT approved.**
- **USDA and FDA compliant**
- **Strong enough to transport hazardous chemicals**
- The standard color is blue; other colors are available

***Applications:***

Everything from food products to **hazardous waste**



| GCC Part Number | Capacity Gallons | Capacity Liters | DOT/UN Specifications* | Outside Diam. Inches | Overall Height Inches | Tare Weight Approx. lbs. |
|-----------------|------------------|-----------------|------------------------|----------------------|-----------------------|--------------------------|
|                 |                  |                 |                        |                      |                       |                          |
| N355HF-S        | 55               | 208             | 1H1/Y1.9/150           | 23.375               | 36                    | 22.5                     |
| N355HF-DU-N     | 55               | 208             | 1H1/Y1.9/150           | 23.75                | 35                    | 23                       |

|               |    |     |              |       |       |      |
|---------------|----|-----|--------------|-------|-------|------|
| N355HF-DU-BK  | 55 | 208 | 1H1/Y1.8/100 | 23.75 | 35    | 23   |
| N330HF-S      | 30 | 113 | 1H1/Y1.8/100 | 19.25 | 29.5  | 15.5 |
| N315HF-DU-T-N | 15 | 56  | 1H1/Y1.8/100 | 14.5  | 26.25 | 7.5  |
| N315HF-DU     | 15 | 60  | 1H1/Y1.9/250 | 15.5  | 23.5  | 9.5  |
| N315HF-DU-X   | 15 | 56  | 1H1/X1.9/250 | 14.5  | 26.25 | 11   |

Manufacturer:

**General Container Corp.**  
54 Veronica Avenue  
PO Box 6140  
Somerset, New Jersey  
08875-6140  
USA  
Tel: 732.435.0020  
Fax: 732.435.0040  
[sales@generalcontainer.com](mailto:sales@generalcontainer.com).

### **Appendix 5.1.3. Over-pack/Salvage Drums**

These **polyethylene hazardous materials salvage drums** are affordably priced and offer significant space and freight savings. Their easy-on screw on/off lids eliminate the need for closure tools and allow for efficient sealing.

#### ***Construction:***

Manufactured from polyethylene

#### ***Design:***

- **Models comply with UN Packaging Group 1 (X-Rating)**
- **Certified for use as DOT Salvage Drums, 49 CFR 173.3 (3)**
- **UN approved.**

#### ***Applications:***

- **Acids, caustics, and corrosives**
- **Direct containment and transport of hazardous solids**

- Overpacking of damaged or leaking drums and packages
- Collection and transportation of soiled sorbents
- Clean-up of contaminated sites
- Emergency response
- Use as spill kits.



| GCC Part Number | Capacity Gallons | Capacity Liters | DOT/UN Specifications* | To Overpack | Inside Diam. Inches | Inside Height Inches | Outside Diam. Inches | Overall Height Inches |
|-----------------|------------------|-----------------|------------------------|-------------|---------------------|----------------------|----------------------|-----------------------|
| N3600FRC        | 600              | 2252            | Not Required           | n/a         | 51.25/47            | 66                   | 59.24                | 70.75                 |
| N3180FRC        | 180              | 675             | Not Required           | n/a         | 31.75/29.5          | 52                   | 36.5                 | 56.5                  |
| N3110FRC        | 110              | 416             | 1H2/X295/S             | 55          | 27/24.5             | 40.5                 | 31.5                 | 45                    |
| N395FRC2        | 95               | 357             | 1H2/X340/S             | 55          | 27.5/24.5           | 37.125               | 31                   | 43                    |
| N365FRC         | 65               | 244             | 1H2/Y200/S             | 30          | 23.5                | 34.5                 | 27.75                | 36.5                  |
| N355FRC-X       | 55               | 208             | 1H2/X204/S             | 30          | 19.75               | 35                   | 24                   | 37.5                  |
| N330FRC-X       | 30               | 113             | 1H2/X129/S             | 20/15/10    | 16.75               | 26                   | 22                   | 28.25                 |
| N320FRC         | 20               | 75              | 1H2/X36/S              | 10/5        | 21                  | 17                   | 21.5                 | 18                    |

Manufacturer: *General Container Corp.*

**Appendix 5.1.4. HazPac Container**

**HazPac is the choice for bulk disposable packaging of hazardous solid materials.**

***Construction:***

Heavy UN box supplied with a 10 mil poly liner and special pallet.

***Design:***

- Box measures 36" x 36" x 36"
- Box mounts on a supplied wood pallet

- Maximum capacity is 2200 pounds

**Applications:**

- **UN 11G/Y approved for most Packing Group II and III hazardous solids.**



| GCC Part Number | DOT/UN Specifications* | Outside Diam. Inches | Overall Height Inches | Tare Weight Approx. lbs. |
|-----------------|------------------------|----------------------|-----------------------|--------------------------|
| MHAZMAX         | 11G/Y                  | 36                   | 36                    | 75                       |

Manufacturer: *General Container Corp.*

**Appendix 5.1.5. Composite Drums**

Composite Drums from General Container provide the strength and durability of a steel drum, plus the chemical compatibility of a polyethylene drum, (all rolled into one).

**Construction:**

Polyethylene/Steel composite with polyethylene bung plugs threaded directly into liner.

**Design:**

- Available in 55, 30, 15 and 5 gallons
- Conforms to UN Spec. 6HA1.

**Applications:**

- **Hazardous Material** Transportation of liquids



| GCC Part Number | Capacity Gallons | Capacity Liters | DOT/UN Specifications* | Outside      | Overall       | Tare Weight Approx. lbs. |
|-----------------|------------------|-----------------|------------------------|--------------|---------------|--------------------------|
|                 |                  |                 |                        | Diam. Inches | Height Inches |                          |
| N855FRC18-DU    | 55               | 208             | 6HA1/Y1.8/100          | 23.6875      | 35.6875       | 59                       |
| N855HF18-DU     | 55               | 208             | 6HA1/Y1.8/100          | 23.40625     | 35.375        | 59                       |
| N830FRC-G       | 30               | 110             | 6HA1/Y2.0/250          | 19           | 30            | 35                       |
| N805FRC24-DU    | 5                | 19              | 1A2/X50/S              | 11.25        | 16.1875       | 21                       |

Manufacturer: *General Container Corp.*

**Appendix 5.1.6. Containers for Keeping Chemicals & Waste**

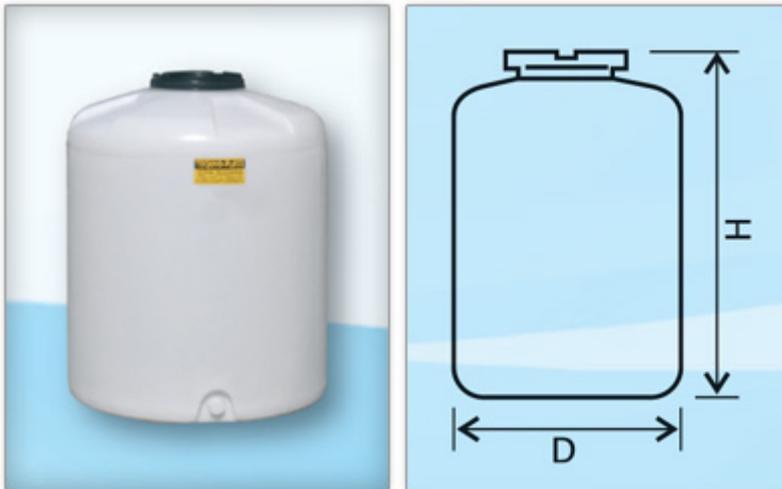
*These containers are approved (certified) for use in the industry in accordance with the national and international quality standards and comply with all requirements of the European Community countries*

They are also highly resistant to corrosion.

These containers are suited for keeping and transporting a number of organic and non-organic, liquid and solid substances of acid, alkaline and neutral character such as organic and non-organic acids, alkali, salts, etc.

**Types of Containers :**

## 1. VERTICAL CONTAINERS

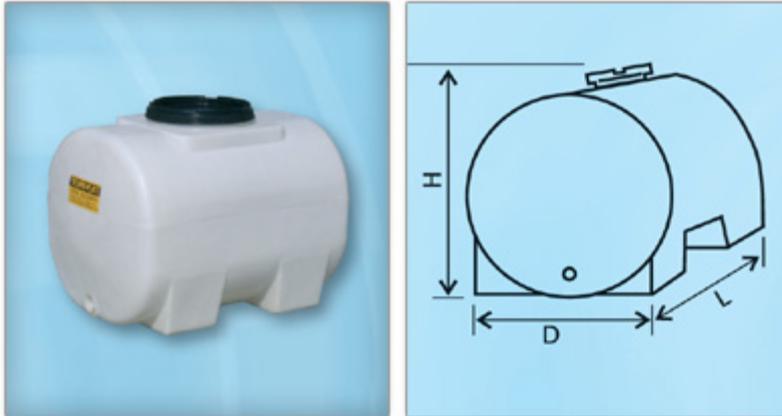


|                              |            |            |            |            |             |             |             |             |
|------------------------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|
| <b>Capacity (L)</b>          | <b>200</b> | <b>200</b> | <b>500</b> | <b>700</b> | <b>1000</b> | <b>1500</b> | <b>3000</b> | <b>4300</b> |
| <b>Container weight (kg)</b> | 8.5        | 8.5        | 16         | 21         | 26          | 35          | 70          | 100         |
| <b>D-diameter (mm)</b>       | 550        | 640        | 730        | 740        | 1070        | 1075        | 1600        | 1820        |
| <b>H - height (mm)</b>       | 1000       | 770        | 1310       | 1880       | 1330        | 1870        | 1720        | 1900        |

## 2. CUBIC CONTAINERS



#### 4. HORIZONTAL CONTAINERS



|                              |            |             |             |             |
|------------------------------|------------|-------------|-------------|-------------|
| <b>Capacity (L)</b>          | <b>300</b> | <b>1500</b> | <b>2500</b> | <b>3200</b> |
| <b>Container weight (kg)</b> | 14         | 40          | 55          | 70          |
| <b>D-diameter (mm)</b>       | 700        | 1365        | 1600        | 1720        |
| <b>L - lenght (mm)</b>       | 1000       | 1455        | 1800        | 1820        |
| <b>H - height (mm)</b>       | 800        | 1200        | 1370        | 1400        |

Manufacturer:

***Techno-Plast Ltd – Bulgaria***

Address: 1225 Sofia, P.O. Box 29, "Orlandovci", 34 "Odesa" St.

Phone: +359 2 936 7348, (7019)

GSM: +359 887 84 03 93, +359 887 96 68 69

Fax: +359 2 936 7532

E-mail: [technoplast1993@yahoo.com](mailto:technoplast1993@yahoo.com), [techno\\_plast@mail.bg](mailto:techno_plast@mail.bg)



## APPENDIX 5.2.

### “HAZMAT” STORAGE BUILDINGS.

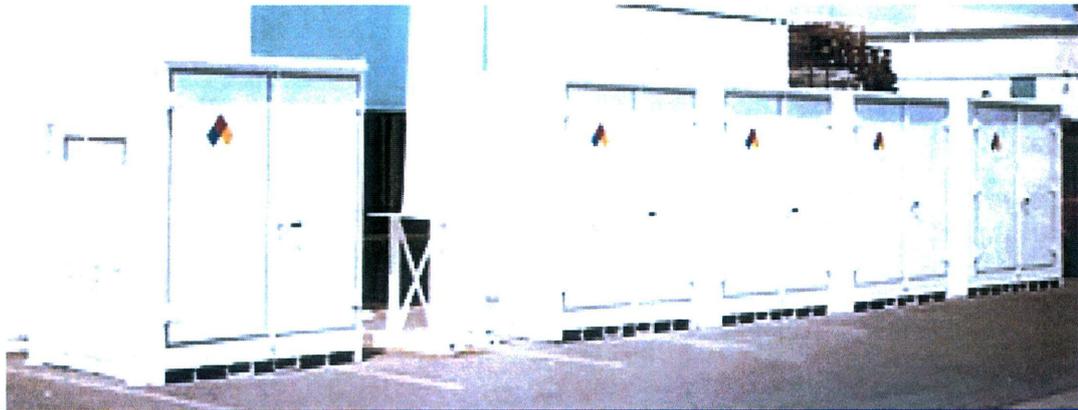
THE HAZMAT STORAGE BUILDINGS ARE DESIGNED FOR TEMPORARY STORAGE OF HAZARDOUS WASTE ON THE FACTORY SITE (BEFORE THEIR DEFINITIVE DISPOSAL TO A CERTIFIED LANDFILL).

Hazmat Storage Buildings provide the safest and most complete solution for the storage of hazardous chemicals.

Hazmat Buildings come standard with a 6" deep secondary containment sump to exceed the EPA spill containment requirements as set forth in 40CFR 264.175. Heavy gauge forklift pockets allow for easy loading and off-loading, as well as portability once it gets to customer's location.

All buildings are designed in accordance with OSHA and NFPA Code 30 requirements and all Standard Sizes are Factory Mutual Approved.





## Hazmat Chemical Storage

**Natural Convection Air Vents**  
*(OSHA, FM 6049, IBC)*

**Explosion Relief Panel(s)**  
*(IBC)*

**Static Ground Connection Inside and Out**  
*(FM, OSHA, NFPA)*

**Forklift Channels with Anchoring Brackets**  
*(EPA, to lift off ground & Allow for visual inspection of Sump area, IBC)*

**Chemical / Corrosive / Ultraviolet Resistant Paint**

**NFPA 704 Warning Label for Hazard Rating System with Placard Holder and Protective Shield**  
*(FM, OSHA, NFPA)*

**Removable Galvanized Steel Safety Floor Planking**  
*(250lb FM Requirement, OSHA 1910, IBC)*

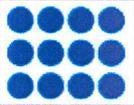
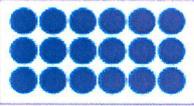
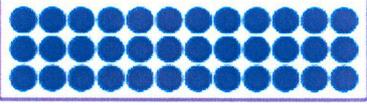
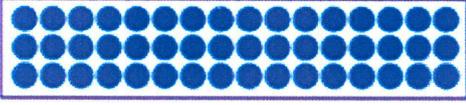
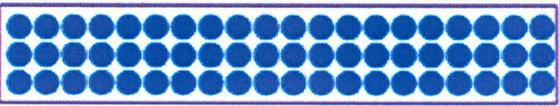
**Leak-tight, Continuously Welded Sump Meets EPA and OSHA Requirements for Secondary Containment**  
*(EPA, NFPA, OSHA, FM, IBC)*

**Reflective Warning Tape Marking Entry**  
*(OSHA 1910, IBC)*

**Heavy Gauge Aluminum Threshold**  
*(IBC)*

### Sizes & Specs

| Exterior Dimensions (LxWxH) | Interior Dimensions (LxWxH) | Door Dimensions (WxH)   | Drum Capacity |
|-----------------------------|-----------------------------|-------------------------|---------------|
| 5' x 3'5" x 7'1"            | 4'6" x 3' x 5'8"            | 3'6" x 5'2" single leaf | 2 Drums       |
| 5' x 5' x 7'1"              | 4'6" x 4'6" x 5'8"          | 3'6" x 5'2" single leaf | 4 Drums       |
| 7' x 5' x 8'6"              | 6'6" x 4'6" x 7'1"          | 3'6" x 6'8" single leaf | 6 drums       |
| 7' x 7' x 8'6"              | 6'6" x 6'6" x 7'1"          | 3'6" x 6'8" single leaf | 9 drums       |
| 9' x 7' x 8'6"              | 8'6" x 6'6" x 7'1"          | 3'6" x 6'8" single leaf | 12 drums      |

|                    |                        |                          |          |   |
|--------------------|------------------------|--------------------------|----------|---|
| 10' x 8' x<br>8'6" | 9'6" x 7'6"<br>x 7'1"  | 5' x 6'8"<br>double leaf | 12 drums |  |
| 14' x 8' x<br>8'6" | 13'6" x<br>7'6" x 7'1" | 5' x 6'8"<br>double leaf | 18 drums |  |
| 18' x 8' x<br>8'6" | 17'6" x<br>7'6" x 7'1" | 5' x 6'8"<br>double leaf | 24 drums |  |
| 26' x 8' x<br>8'6" | 25'6" x<br>7'6" x 7'1" | 5' x 6'8"<br>double leaf | 36 drums |  |
| 34' x 8' x<br>8'6" | 33'6" x<br>7'6" x 7'1" | 5' x 6'8"<br>double leaf | 48 drums |   |
| 42' x 8' x<br>8'6" | 41'6" x<br>7'6" x 7'1" | 5' x 6'8"<br>double leaf | 60 drums |   |

Manufacturer :

***Hazmat Chemical Storage, Inc.***

P.O. Box 15605

Santa Ana, CA 92735

(714) 480-1290

(800) 401-5877

email: [info@hazmatchemicalstorage.com](mailto:info@hazmatchemicalstorage.com)

## APPENDIX 5.3.

### SPILL CONTAINMENT PLATFORMS AND MODULAR SYSTEMS

Spill containment platforms provide secondary spill containment and feature a low profile design for easy access. All polyethylene construction for excellent chemical resistance, and include our standard removable poly gratings with 1.75" square openings.

Compatible with Eagle's 1689 ramp for easy loading and unloading.

Modular platforms in 1 and 2 drum base sizes. Also available is a 4 drum modular platform consisting of 2 each 2 drum platforms joined with 2" U-Channel connectors.

These modular can be arranged in a variety of configurations to custom fit the customer's workplace.



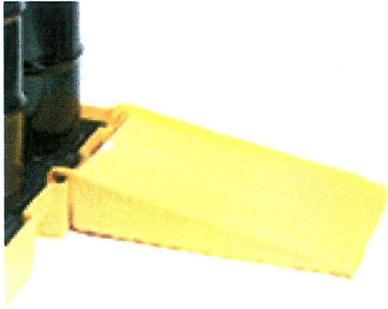
**#1633- 1 drum platform**



**#1686- 6 drum platform**



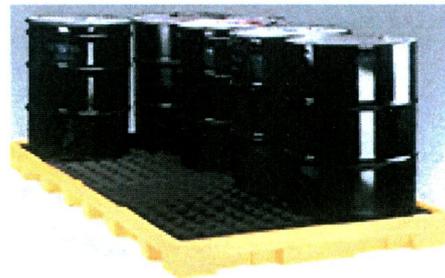
**#1632- 2 drum platform**



#1689- platform ramp



#1634- modular platform



#1688- 8 drum platform



#1647- 4 drum inline platform

Sizes & Specs

| Model # | Description       | Dimensions<br>LxWxH (in.) | Sump<br>Capacity | Load<br>Capacity |
|---------|-------------------|---------------------------|------------------|------------------|
| 1633    | 1 drum<br>modular | 26"x26"x61/2"             | 12 gallons       | 2000 lbs.        |
| 1632    | 2 drum<br>modular | 261/4"x511/2"x61/2"       | 30 gallons       | 5000 lbs.        |

|      |   |                         |                                |             |
|------|---|-------------------------|--------------------------------|-------------|
| 1634 | 4 drum modular                                  | 52 1/2"x51 1/2"x61 1/2" | 30 gallons each<br>2-drum side | 10,000 lbs. |
| 1647 | 4 drum inline(+)                                | 106"x30 1/4"x63 1/4"    | 66 gallons                     | 8000 lbs.   |
| 1686 | 6 drum platform(+)                              | 77"x51 1/2"x61 1/2"     | 66 gallons                     | 8000 lbs.   |
| 1688 | 8 drum platform(+)                              | 102"x51 1/2"x61 1/2"    | 66 gallons                     | 10,000 lbs. |
| 1689 | Platform Ramp<br>(available in black or yellow) | 45 1/2"x32"x8"          | ---                            | 1500 lbs.   |

(+)Meets EPA Spill Containment Requirements (40CFR 264.175)

Manufacturer:

**Hazmat Chemical Storage, Inc.**

P.O. Box 15605

Santa Ana, CA 92735

(714) 480-1290

(800) 401-5877

email: [info@hazmatchemicalstorage.com](mailto:info@hazmatchemicalstorage.com)

- **Ultra-Spill Deck**

With the Ultra Spill Deck, one can create a containment system that meets customer's specific needs.

***Construction:***

Polyethylene

***Design:***

Ultra-Spill Decks are available in 1, 2 and 4-drum modules

Modules are easily connected in an unlimited number of customized configurations Meets EPA Container Storage Regulation 40 CFR 264.175 and Uniform Fire Code Spill Containment Regulations when assembled in configurations of six (6) drums or more.

The bulkhead fittings lock connected modules together and allow spilled liquid to flow from one module to the next

Applications:

- **Hazardous waste collection;**
- Storage of virgin chemicals;

- Drum dispensing;
- Battery storage;
- **Ultra-Spill Deck Polyethylene Models**

Low profile, modular Spill Decks that can be configured for customers exact containment requirements. Easy to attach, they allow for full compliance with the appropriate Container Storage Regulation 40CFR264.175.



| GCC Part Number | Containment Capacity gals | Weight | Dimensions Inches  | Uniformly Distributed Load. Lbs |
|-----------------|---------------------------|--------|--------------------|---------------------------------|
| 1321            | 11                        | 23     | 25.875x25.875x5.75 | 1500                            |
| 1086            | 22                        | 40     | 52x25.875x5.75     | 3000                            |
| 1072            | 42                        | 62     | 52x52x5.75         | 6000                            |

Manufacturer:  
**General Container Corp.**  
 54 Veronica Avenue  
 PO Box 6140  
 Somerset, New Jersey  
 08875-6140  
 USA  
 Tel: 732.435.0020  
 Fax: 732.435.0040  
[sales@generalcontainer.com](mailto:sales@generalcontainer.com).

## **APPENDIX 5.4.**

### **ADR CONVENTION – UN CODES & INSTRUCTIONS**

ECONOMIC COMMISSION FOR EUROPE  
Committee on Inland Transport

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# ADR

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applicable as from 1 January 2007

**European Agreement**  
Concerning the International Carriage  
of Dangerous Goods by Road

**Volume II**



UNITED NATIONS

VOLUME II, ADR – 2007, CHAPTER 4.1.4.1.

4.1.4.1 Packing instructions concerning the use of packagings (except IBCs and large packagings)

| P001  |   | PACKING INSTRUCTION (LIQUIDS)           |                  |                   | P001 |
|---|---|---|------------------|-------------------|------|
| The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met: |   |   |                  |                   |      |
| Combination packagings:   |   | Maximum capacity/Net mass (see 4.1.3.3) |                  |                   |      |
| Inner packagings  | Outer packagings  | Packing group I                         | Packing group II | Packing group III |      |
| Glass 10 l<br>Plastics 30 l<br>Metal 40 l   | <b>Drums</b>  |   |                  |                   |      |
|   | steel (1A2)   | 250 kg                                  | 400 kg           | 400 kg            |      |
|   | aluminium (1B2)   | 250 kg                                  | 400 kg           | 400 kg            |      |
|   | metal other than steel or aluminium (1N2)                     | 250 kg                                  | 400 kg           | 400 kg            |      |
|   | plastics (1H2)  | 250 kg                                  | 400 kg           | 400 kg            |      |
|   | plywood (1D)  | 150 kg                                  | 400 kg           | 400 kg            |      |
|   | fibre (1G)  | 75 kg                                   | 400 kg           | 400 kg            |      |
|   | <b>Boxes</b>  |   |                  |                   |      |
|   | steel (4A)  | 250 kg                                  | 400 kg           | 400 kg            |      |
|   | aluminium (4B)  | 250 kg                                  | 400 kg           | 400 kg            |      |
|   | natural wood (4C1, 4C2)                                       | 150 kg                                  | 400 kg           | 400 kg            |      |
|   | plywood (4D)  | 150 kg                                  | 400 kg           | 400 kg            |      |
|   | reconstituted wood (4F)                                       | 75 kg                                   | 400 kg           | 400 kg            |      |
|   | fibreboard (4G)   | 75 kg                                   | 400 kg           | 400 kg            |      |
|   | expanded plastics (4H1)                                       | 60 kg                                   | 60 kg            | 60 kg             |      |
|   | solid plastics (4H2)  | 150 kg                                  | 400 kg           | 400 kg            |      |
|   | <b>Jerricans</b>  |   |                  |                   |      |
|   | steel (3A2)   | 120 kg                                  | 120 kg           | 120 kg            |      |
| aluminium (3B2)   | 120 kg  | 120 kg                                  | 120 kg           |                   |      |
| plastics (3H2)  | 120 kg  | 120 kg                                  | 120 kg           |                   |      |
| <b>Single packagings:</b>   |   |   |                  |                   |      |
| <b>Drums</b>  |   |   |                  |                   |      |
|   | steel, non-removable head (1A1)                               | 250 l                                   | 450 l            | 450 l             |      |
|   | steel, removable head (1A2)                                   | 250 l <sup>a</sup>                      | 450 l            | 450 l             |      |
|   | aluminium, non-removable head (1B1)                           | 250 l                                   | 450 l            | 450 l             |      |
|   | aluminium, removable head (1B2)                               | 250 l <sup>a</sup>                      | 450 l            | 450 l             |      |
|   | metal other than steel or aluminium, non-removable head (1N1) | 250 l                                   | 450 l            | 450 l             |      |
|   | metal other than steel or aluminium, removable head (1N2)     | 250 l <sup>a</sup>                      | 450 l            | 450 l             |      |
|   | plastics, non-removable head (1H1)                            | 250 l                                   | 450 l            | 450 l             |      |
|   | plastics, removable head (1H2)                                | 250 l <sup>a</sup>                      | 450 l            | 450 l             |      |
| <b>Jerricans</b>  |   |   |                  |                   |      |
|   | steel, non-removable head (3A1)                               | 60 l                                    | 60 l             | 60 l              |      |
|   | steel, removable head (3A2)                                   | 60 l <sup>a</sup>                       | 60 l             | 60 l              |      |
|   | aluminium, non-removable head (3B1)                           | 60 l                                    | 60 l             | 60 l              |      |
|   | aluminium, removable head (3B2)                               | 60 l <sup>a</sup>                       | 60 l             | 60 l              |      |
|   | plastics, non-removable head (3H1)                            | 60 l                                    | 60 l             | 60 l              |      |
|   | plastics, removable head (3H2)                                | 60 l <sup>a</sup>                       | 60 l             | 60 l              |      |

<sup>a</sup> Only substances with a viscosity of more than 2 680 mm<sup>2</sup>/s are authorized.

(Cont'd on next page)

| P001 PACKING INSTRUCTION (LIQUIDS) (cont'd) P001   |   |                  |                   |
|--|---|------------------|-------------------|
| Single packagings (cont'd)   | Maximum capacity/Net mass (see 4.1.3.3) |                  |                   |
| Composite packagings   | Packing group I                         | Packing group II | Packing group III |
| plastics receptacle with outer steel or aluminium drum (6HA1, 6HB1)  | 250 l                                   | 250 l            | 250 l             |
| plastics receptacle with outer fibre, plastics or plywood drum (6HG1, 6HH1, 6HD1)  | 120 l                                   | 250 l            | 250 l             |
| plastics receptacle with outer steel or aluminium crate or box or plastics receptacle with outer wooden, plywood, fibreboard or solid plastics box (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2)   | 60 l                                    | 60 l             | 60 l              |
| glass receptacle with outer steel, aluminium, fibreboard, plywood, solid plastics or expanded plastics drum (6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2) or with outer steel or aluminium crate or box or with outer wooden or fibreboard box or with outer wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 or 6PD2)  | 60 l                                    | 60 l             | 60 l              |
| <b>Pressure receptacles</b> , provided that the general provisions of 4.1.3.6 are met.   |   |                  |                   |
| <b>Additional requirement:</b><br>For substances of Class 3, packing group III, which give off small quantities of carbon dioxide or nitrogen, the packagings shall be vented.   |   |                  |                   |
| <b>Special packing provisions:</b>   |   |                  |                   |
| <b>PP1</b> For UN Nos. 1133, 1210, 1263 and 1866, substances of packing groups II and III may be carried in quantities of 5 litres or less per packaging in metal or plastics packagings which are not required to meet the performance tests of Chapter 6.1, provided that such packagings are carried: <ul style="list-style-type: none"> <li>(a) in palletized loads, a pallet box or unit load device, e.g. individual packagings placed or stacked and secured by strapping, shrink or stretch-wrapping or other suitable means to a pallet; or</li> <li>(b) as inner packagings of combination packagings with a maximum net mass of 40 kg.</li> </ul> |   |                  |                   |
| <b>PP2</b> For UN 3065, wooden barrels with a maximum capacity of 250 litres and which do not meet the provisions of Chapter 6.1 may be used.  |   |                  |                   |
| <b>PP4</b> For UN No. 1774, packagings shall meet the packing group II performance level.  |   |                  |                   |
| <b>PP5</b> For UN No. 1204, packagings shall be so constructed that explosion is not possible by reason of increased internal pressure. Cylinders, tubes and pressure drums shall not be used for these substances.  |   |                  |                   |
| <b>PP6</b> For UN Nos. 1851 and 3248, the maximum net quantity per package shall be 5 l.   |   |                  |                   |
| <b>PP10</b> For UN No. 1791, packing group II, the packaging shall be vented.  |   |                  |                   |
| <b>PP31</b> For UN No. 1131, packagings shall be hermetically sealed.  |   |                  |                   |
| <b>PP33</b> For UN No. 1308, packing groups I and II, only combination packagings with a maximum gross mass of 75 kg allowed.  |   |                  |                   |
| <b>PP81</b> For UN No. 1790 with more than 60% but not more than 85% hydrofluoric acid and UN No. 2031 with more than 55% nitric acid, the permitted use of plastics drums and jerricans as single packagings shall be two years from their date of manufacture.   |   |                  |                   |
| <b>Special packing provisions specific to RID and ADR:</b>   |   |                  |                   |
| <b>RR2</b> For UN No. 1261, removable head packagings are not permitted.   |   |                  |                   |

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| P002  |  | PACKING INSTRUCTION (SOLIDS)   |                  |                   | P002 |
|---|--|--------------------------------|------------------|-------------------|------|
| The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:   |  |                                |                  |                   |      |
| Combination packagings:   |  | Maximum net mass (see 4.1.3.3) |                  |                   |      |
| Inner packagings  | Outer packagings                         | Packing group I                | Packing group II | Packing group III |      |
|   | <b>Drums</b>                             |                                |                  |                   |      |
| Glass 10 kg   | steel (1A2)                              | 400 kg                         | 400 kg           | 400 kg            |      |
| Plastics <sup>a</sup> 50 kg   | aluminium (1B2)                          | 400 kg                         | 400 kg           | 400 kg            |      |
| Metal 50 kg   | metal, other than steel                  | 400 kg                         | 400 kg           | 400 kg            |      |
| Paper <sup>a, b, c</sup> 50 kg  | or aluminium (1N2)                       |                                |                  |                   |      |
| Fibre <sup>a, b, c</sup> 50 kg  | plastics (1H2)                           | 400 kg                         | 400 kg           | 400 kg            |      |
| <sup>a</sup> <i>These inner packagings shall be sift-proof.</i>   | plywood (1D)                             | 400 kg                         | 400 kg           | 400 kg            |      |
|   | fibre (1G)                               | 400 kg                         | 400 kg           | 400 kg            |      |
|   | <b>Boxes</b>                             |                                |                  |                   |      |
| <sup>b</sup> <i>These inner packagings shall not be used when the substances being carried may become liquid during carriage (see 4.1.3.4).</i> | steel (4A)                               | 400 kg                         | 400 kg           | 400 kg            |      |
|   | aluminium (4B)                           | 400 kg                         | 400 kg           | 400 kg            |      |
|   | natural wood (4C1)                       | 250 kg                         | 400 kg           | 400 kg            |      |
|   | natural wood with sift proof walls (4C2) | 250 kg                         | 400 kg           | 400 kg            |      |
|   | plywood (4D)                             | 250 kg                         | 400 kg           | 400 kg            |      |
|   | reconstituted wood (4F)                  | 125 kg                         | 400 kg           | 400 kg            |      |
|   | fibreboard (4G)                          | 125 kg                         | 400 kg           | 400 kg            |      |
| <sup>c</sup> <i>These inner packagings shall not be used for substances of packing group I.</i>   | expanded plastics (4H1)                  | 60 kg                          | 60 kg            | 60 kg             |      |
|   | solid plastics (4H2)                     | 250 kg                         | 400 kg           | 400 kg            |      |
|   | <b>Jerricans</b>                         |                                |                  |                   |      |
|   | steel (3A2)                              | 120 kg                         | 120 kg           | 120 kg            |      |
|   | aluminium (3B2)                          | 120 kg                         | 120 kg           | 120 kg            |      |
|   | plastics (3H2)                           | 120 kg                         | 120 kg           | 120 kg            |      |
| <b>Single packagings:</b>   |  |                                |                  |                   |      |
| <b>Drums</b>  |  |                                |                  |                   |      |
| steel (1A1 or 1A2) <sup>d</sup>   |  | 400 kg                         | 400 kg           | 400 kg            |      |
| aluminium (1B1 or 1B2) <sup>d</sup>   |  | 400 kg                         | 400 kg           | 400 kg            |      |
| metal, other than steel or aluminium (1N1 or 1N2) <sup>d</sup>  |  | 400 kg                         | 400 kg           | 400 kg            |      |
| plastics (1H1 or 1H2) <sup>d</sup>  |  | 400 kg                         | 400 kg           | 400 kg            |      |
| fibre (1G) <sup>e</sup>   |  | 400 kg                         | 400 kg           | 400 kg            |      |
| plywood (1D) <sup>e</sup>   |  | 400 kg                         | 400 kg           | 400 kg            |      |
| <b>Jerricans</b>  |  |                                |                  |                   |      |
| steel (3A1 or 3A2) <sup>d</sup>   |  | 120 kg                         | 120 kg           | 120 kg            |      |
| aluminium (3B1 or 3B2) <sup>d</sup>   |  | 120 kg                         | 120 kg           | 120 kg            |      |
| plastics (3H1 or 3H2) <sup>d</sup>  |  | 120 kg                         | 120 kg           | 120 kg            |      |
| <sup>d</sup> <i>These packagings shall not be used for substances of packing group I that may become liquid during carriage (see 4.1.3.4).</i>  |  |                                |                  |                   |      |
| <sup>e</sup> <i>These packagings shall not be used when substances being carried may become liquid during carriage (see 4.1.3.4).</i>           |  |                                |                  |                   |      |

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| P002   | PACKING INSTRUCTION (SOLIDS) (cont'd) |                  |                   | P002 |
|--|---------------------------------------|------------------|-------------------|------|
| Single packagings (cont'd):  | Maximum net mass (see 4.1.3.3.)       |                  |                   |      |
|  | Packing group I                       | Packing group II | Packing group III |      |
| <b>Boxes</b>   |                                       |                  |                   |      |
| steel (4A) <sup>e</sup>  | Not allowed                           | 400 kg           | 400 kg            |      |
| aluminium (4B) <sup>e</sup>  | Not allowed                           | 400 kg           | 400 kg            |      |
| natural wood (4C1) <sup>e</sup>  | Not allowed                           | 400 kg           | 400 kg            |      |
| plywood (4D) <sup>e</sup>  | Not allowed                           | 400 kg           | 400 kg            |      |
| reconstituted wood (4F) <sup>e</sup>   | Not allowed                           | 400 kg           | 400 kg            |      |
| natural wood with sift-proof walls (4C2) <sup>e</sup>  | Not allowed                           | 400 kg           | 400 kg            |      |
| fibreboard (4G) <sup>e</sup>   | Not allowed                           | 400 kg           | 400 kg            |      |
| solid plastics (4H2) <sup>e</sup>  | Not allowed                           | 400 kg           | 400 kg            |      |
| <b>Bags</b>  |                                       |                  |                   |      |
| bags (5H3, 5H4, 5L3, 5M2) <sup>e</sup>   | Not allowed                           | 50 kg            | 50 kg             |      |
| <b>Composite packagings</b>  |                                       |                  |                   |      |
| plastics receptacle with outer steel, aluminium, plywood, fibre or plastics drum (6HA1, 6HB1, 6HG1 <sup>e</sup> , 6HD1 <sup>e</sup> , or 6HH1)   | 400 kg                                | 400 kg           | 400 kg            |      |
| plastics receptacle with outer steel or aluminium crate or box, wooden box, plywood box, fibreboard box or solid plastics box (6HA2, 6HB2, 6HC, 6HD2 <sup>e</sup> , 6HG2 <sup>e</sup> or 6HH2)   | 75 kg                                 | 75 kg            | 75 kg             |      |
| glass receptacle with outer steel, aluminium plywood or fibre drum (6PA1, 6PB1, 6PD1 <sup>e</sup> or 6PG1 <sup>e</sup> ) or with outer steel or aluminium crate or box or with outer wooden, or fibreboard box or with outer wickerwork hamper (6PA2, 6PB2, 6PC, 6PD2 <sup>e</sup> , or 6PG2 <sup>e</sup> ) or with outer solid plastics or expanded plastics packaging (6PH2 or 6PH1 <sup>e</sup> ) | 75 kg                                 | 75 kg            | 75 kg             |      |
| <b>Pressure receptacles</b> , provided that the general provisions of 4.1.3.6 are met.   |                                       |                  |                   |      |
| <sup>e</sup> These packagings shall not be used when the substances being carried may become liquid during carriage (see 4.1.3.4).   |                                       |                  |                   |      |

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| UN No. | Name and description  | Class | Classification code | Packing group | Labels          | Special provisions | Limited quantities | Packaging                     |                                     |                                    | Portable tanks and bulk containers |                               |
|--------|---|-------|---------------------|---------------|-----------------|--------------------|--------------------|-------------------------------|-------------------------------------|------------------------------------|------------------------------------|-------------------------------|
|        |   |       |                     |               |                 |                    |                    | Packing instructions<br>4.1.4 | Special packing provisions<br>4.1.4 | Mixed packing provisions<br>4.1.10 | Instructions<br>4.2.5.2<br>7.3.2   | Special provisions<br>4.2.5.3 |
| (1)    | (2)   | (3a)  | (3b)                | (4)           | (5)             | (6)                | (7)                | (8)                           | (9a)                                | (9b)                               | (10)                               | (11)                          |
| 3071   | MERCAPTANS, LIQUID, TOXIC, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, TOXIC, FLAMMABLE, N.O.S. | 6.1   | TF1                 | II            | 6.1<br>+3       | 274                | LQ17               | P001<br>IBC02                 |                                     | MP15                               | T11                                | TP2 TP27                      |
| 3072   | LIFE-SAVING APPLIANCES NOT SELF-INFLATING containing dangerous goods as equipment                   | 9     | M5                  |               | 9               | 296<br>635         | LQ0                | P905                          |                                     |                                    |                                    |                               |
| 3073   | VINYLPYRIDINES, STABILIZED  | 6.1   | TFC                 | II            | 6.1<br>+3<br>+8 |                    | LQ17               | P001<br>IBC01                 |                                     | MP15                               | T7                                 | TP2                           |
| 3077   | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  | 9     | M7                  | III           | 9               | 274<br>601         | LQ27               | P002<br>IBC08<br>LP02<br>R001 | PP12<br>B3                          | MP10                               | T1                                 | TP33                          |
| 3078   | CERIUM, turnings or gritty powder   | 4.3   | W2                  | II            | 4.3             | 550                | LQ11               | P410<br>IBC07                 |                                     | MP14                               | T3                                 | TP33                          |
| 3079   | METHACRYLONITRILE, STABILIZED   | 3     | FT1                 | I             | 3<br>+6.1       |                    | LQ0                | P001                          |                                     | MP7 MP17                           | T14                                | TP2                           |
| 3080   | ISOCYANATES, TOXIC, FLAMMABLE, N.O.S. or ISOCYANATE SOLUTION, TOXIC, FLAMMABLE, N.O.S.              | 6.1   | TF1                 | II            | 6.1<br>+3       | 274<br>551         | LQ17               | P001<br>IBC02                 |                                     | MP15                               | T11                                | TP2 TP27                      |
| 3082   | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.   | 9     | M6                  | III           | 9               | 274<br>601         | LQ7                | P001<br>IBC03<br>LP01<br>R001 |                                     | MP15                               | T4                                 | TP1 TP29                      |
| 3083   | PERCHLORYL FLUORIDE   | 2     | 2TO                 |               | 2.3<br>+5.1     |                    | LQ0                | P200                          |                                     | MP9                                | (M)                                |                               |
| 3084   | CORROSIVE SOLID, OXIDIZING, N.O.S.  | 8     | CO2                 | I             | 8<br>+5.1       | 274                | LQ0                | P002                          |                                     | MP18                               | T6                                 | TP9<br>TP33                   |
| 3084   | CORROSIVE SOLID, OXIDIZING, N.O.S.  | 8     | CO2                 | II            | 8<br>+5.1       | 274                | LQ23               | P002<br>IBC06                 |                                     | MP10                               | T3                                 | TP33                          |
| 3085   | OXIDIZING SOLID, CORROSIVE, N.O.S.  | 5.1   | OC2                 | I             | 5.1<br>+8       | 274                | LQ0                | P503                          |                                     | MP2                                |                                    |                               |
| 3085   | OXIDIZING SOLID, CORROSIVE, N.O.S.  | 5.1   | OC2                 | II            | 5.1<br>+8       | 274                | LQ11               | P002<br>IBC06                 |                                     | MP2                                | T3                                 | TP33                          |
| 3085   | OXIDIZING SOLID, CORROSIVE, N.O.S.  | 5.1   | OC2                 | III           | 5.1<br>+8       | 274                | LQ12               | P002<br>IBC08<br>R001         | B3                                  | MP2                                | T1                                 | TP33                          |
| 3086   | TOXIC SOLID, OXIDIZING, N.O.S.  | 6.1   | TO2                 | I             | 6.1<br>+5.1     | 274                | LQ0                | P002                          |                                     | MP18                               | T6                                 | TP9<br>TP33                   |
| 3086   | TOXIC SOLID, OXIDIZING, N.O.S.  | 6.1   | TO2                 | II            | 6.1<br>+5.1     | 274                | LQ18               | P002<br>IBC06                 |                                     | MP10                               | T3                                 | TP33                          |
| 3087   | OXIDIZING SOLID, TOXIC, N.O.S.  | 5.1   | OT2                 | I             | 5.1<br>+6.1     | 274                | LQ0                | P503                          |                                     | MP2                                |                                    |                               |
| 3087   | OXIDIZING SOLID, TOXIC, N.O.S.  | 5.1   | OT2                 | II            | 5.1<br>+6.1     | 274                | LQ11               | P002<br>IBC06                 |                                     | MP2                                | T3                                 | TP33                          |
| 3087   | OXIDIZING SOLID, TOXIC, N.O.S.  | 5.1   | OT2                 | III           | 5.1<br>+6.1     | 274                | LQ12               | P002<br>IBC08<br>R001         | B3                                  | MP2                                | T1                                 | TP33                          |
| 3088   | SELF-HEATING SOLID, ORGANIC, N.O.S.   | 4.2   | S2                  | II            | 4.2             | 274                | LQ0                | P410<br>IBC06                 |                                     | MP14                               | T3                                 | TP33                          |
| 3088   | SELF-HEATING SOLID, ORGANIC, N.O.S.   | 4.2   | S2                  | III           | 4.2             | 274                | LQ0                | P002<br>IBC08<br>LP02<br>R001 | B3                                  | MP14                               | T1                                 | TP33                          |
| 3089   | METAL POWDER, FLAMMABLE, N.O.S.   | 4.1   | F3                  | II            | 4.1             | 274<br>552         | LQ8                | P002<br>IBC08                 | B4                                  | MP11                               | T3                                 | TP33                          |
| 3089   | METAL POWDER, FLAMMABLE, N.O.S.   | 4.1   | F3                  | III           | 4.1             | 274<br>552         | LQ9                | P002<br>IBC06<br>R001         |                                     | MP11                               | T1                                 | TP33                          |

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| ADR tank       |                        | Vehicle for tank carriage | Transport category (Tunnel restriction code) | Special provisions for carriage |       |                                 |           | Hazard identification No. | UN No. | Name and description  |
|----------------|------------------------|---------------------------|--|---------------------------------|-------|---------------------------------|-----------|---------------------------|--------|---|
| Tank code      | Special provisions     |                           |  | Packages                        | Bulk  | Loading, unloading and handling | Operation |                           |        |   |
| 4.3            | 4.3.5, 6.8.4           | 9.1.1.2                   | 1.1.3.6 (8.6)                                | 7.2.4                           | 7.3.3 | 7.5.11                          | 8.5       | 5.3.2.3                   | 3.1.2  |   |
| (12)           | (13)                   | (14)                      | (15)   | (16)                            | (17)  | (18)                            | (19)      | (20)                      | (1)    | (2)   |
| L4BH           | TU15 TE19              | FL                        | 2 (D1E)                                      |                                 |       | CV13<br>CV28                    | S2 S9 S19 | 63                        | 3071   | MERCAPTANS, LIQUID, TOXIC, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, TOXIC, FLAMMABLE, N.O.S. |
|                |                        |                           | 3 (E)  |                                 |       |                                 |           |                           | 3072   | LIFE-SAVING APPLIANCES NOT SELF-INFLATING containing dangerous goods as equipment                   |
| L4BH           | TU15 TE19              | FL                        | 2 (D1E)                                      |                                 |       | CV13<br>CV28                    | S2 S9 S19 | 638                       | 3073   | VINYLPYRIDINES, STABILIZED  |
| SGAV<br>LGBV   |                        | AT                        | 3 (E)  | V13                             | VV3   | CV13                            |           | 90                        | 3077   | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  |
| SGAN           |                        | AT                        | 2 (D1E)                                      | V1<br>V12                       |       | CV23                            |           | 423                       | 3078   | CERIUM, turnings or gritty powder   |
| L10CH          | TU14 TU15<br>TE21      | FL                        | 1 (C1E)                                      |                                 |       | CV13<br>CV28                    | S2 S19    | 336                       | 3079   | METHACRYLONITRILE, STABILIZED   |
| L4BH           | TU15 TE19              | FL                        | 2 (D1E)                                      |                                 |       | CV13<br>CV28                    | S2 S9 S19 | 63                        | 3080   | ISOCYANATES, TOXIC, FLAMMABLE, N.O.S. or ISOCYANATE SOLUTION, TOXIC, FLAMMABLE, N.O.S.              |
| LGBV           |                        | AT                        | 3 (E)  |                                 |       | CV13                            |           | 90                        | 3082   | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.   |
| PxBH(M)        |                        | AT                        | 1 (C1D)                                      |                                 |       | CV9<br>CV10<br>CV36             | S7 S17    | 265                       | 3083   | PERCHLORYL FLUORIDE   |
| S10AN<br>L10BH |                        | AT                        | 1 (E)  |                                 |       | CV24                            | S20       | 885                       | 3084   | CORROSIVE SOLID, OXIDIZING, N.O.S.  |
| SGAN<br>L4BN   |                        | AT                        | 2 (E)  | V11<br>V12                      |       | CV24                            |           | 85                        | 3084   | CORROSIVE SOLID, OXIDIZING, N.O.S.  |
|                |                        |                           | 1 (B1E)                                      |                                 |       | CV24                            | S20       |                           | 3085   | OXIDIZING SOLID, CORROSIVE, N.O.S.  |
| SGAN           | TU3                    | AT                        | 2 (E)  | V11<br>V12                      |       | CV24                            |           | 58                        | 3085   | OXIDIZING SOLID, CORROSIVE, N.O.S.  |
| SGAN           | TU3                    | AT                        | 3 (E)  |                                 |       | CV24                            |           | 58                        | 3085   | OXIDIZING SOLID, CORROSIVE, N.O.S.  |
| S10AH<br>L10CH | TU14 TU15<br>TE19 TE21 | AT                        | 1 (E)  |                                 |       | CV1<br>CV13<br>CV28             | S9 S17    | 665                       | 3086   | TOXIC SOLID, OXIDIZING, N.O.S.  |
| SGAH<br>L4BH   | TU15 TE19              | AT                        | 2 (E)  | V11<br>V12                      |       | CV13<br>CV28                    | S9 S19    | 65                        | 3086   | TOXIC SOLID, OXIDIZING, N.O.S.  |
|                |                        |                           | 1 (B1E)                                      |                                 |       | CV24<br>CV28                    | S20       |                           | 3087   | OXIDIZING SOLID, TOXIC, N.O.S.  |
| SGAN           | TU3                    | AT                        | 2 (E)  | V11<br>V12                      |       | CV24<br>CV28                    |           | 56                        | 3087   | OXIDIZING SOLID, TOXIC, N.O.S.  |
| SGAN           | TU3                    | AT                        | 3 (E)  |                                 |       | CV24<br>CV28                    |           | 56                        | 3087   | OXIDIZING SOLID, TOXIC, N.O.S.  |
| SGAV           |                        | AT                        | 2 (D1E)                                      | V1<br>V12                       |       |                                 |           | 40                        | 3088   | SELF-HEATING SOLID, ORGANIC, N.O.S.   |
| SGAV           |                        | AT                        | 3 (E)  | V1                              |       |                                 |           | 40                        | 3088   | SELF-HEATING SOLID, ORGANIC, N.O.S.   |
| SGAN           |                        | AT                        | 2 (E)  | V11                             |       |                                 |           | 40                        | 3089   | METAL POWDER, FLAMMABLE, N.O.S.   |
| SGAV           |                        | AT                        | 3 (E)  | V12                             | VV1   |                                 |           | 40                        | 3089   | METAL POWDER, FLAMMABLE, N.O.S.   |



**VOLUME. I, ADR – 2007, CHAPTER 3.1.2.8.**

**3.1.2.8 Generic or "not otherwise specified" (N.O.S.) names**

3.1.2.8.1 Generic and "not otherwise specified" proper shipping names that are assigned to special provision 274 in Column (6) of Table A in Chapter 3.2 shall be supplemented with the technical name of the goods unless a national law or international convention prohibits its disclosure if it is a controlled substance. For explosives of Class 1, the dangerous goods description may be supplemented by additional descriptive text to indicate commercial or military names. Technical names shall be entered in brackets immediately following the proper shipping name. An appropriate modifier, such as "contains" or "containing" or other qualifying words such as "mixture", "solution", etc. and the percentage of the technical constituent may also be used. For example: "UN 1993 FLAMMABLE LIQUID, N.O.S. (CONTAINS XYLENE AND BENZENE), 3, II".

3.1.2.8.1.1 The technical name shall be a recognized chemical name, if relevant a biological name, or other name currently used in scientific and technical handbooks, journals and texts. Trade names shall not be used for this purpose. In the case of pesticides, only ISO common name(s), other name(s) in the World Health Organization (WHO) Recommended Classification of Pesticides by Hazard and Guidelines to Classification, or the name(s) of the active substance(s) may be used.

3.1.2.8.1.2 When a mixture of dangerous goods is described by one of the "N.O.S." or "generic" entries to which special provision 274 has been allocated in Column (6) of Table A in Chapter 3.2, not more than the two constituents which most predominantly contribute to the hazard or hazards of a mixture need to be shown, excluding controlled substances when their disclosure is prohibited by national law or international convention. If a package containing a mixture is labelled with any subsidiary risk label, one of the two technical names shown in parentheses shall be the name of the constituent which compels the use of the subsidiary risk label.

*NOTE: See 5.4.1.2.2.*

3.1.2.8.1.3 Examples illustrating the selection of the proper shipping name supplemented with the technical name of goods for such N.O.S. entries are:

UN 2902 PESTICIDE, LIQUID, TOXIC, N.O.S. (drazoxolon);  
UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-  
REACTIVE (trimethylgallium).



Translated from Bulgarian

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No. 1060

06 Apr 2007

AEBTRI

**To the attention of:**  
**Ms. Stanka Dimitrova**  
**President of TRE-P**  
**150 Vitosha Blvd., Bl. 70**

Dear Ms. Dimitrova,

RE: Your inquiry about marking of containers and transport vehicles. Our reply is as follows:

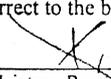
1. The necessary markings on the containers for transportation of your hazardous industrial waste are labels with danger sign No. 9, measuring 10 / 10 cm. A sample of this label is given in chapter 5.2.2.2.2. of ADR, volume II.
2. In case of neutral PH of liquid waste, its UN number and name in the transport document, according to table A of ADR (chapter 3.2, volume I), are: **UN 3082, SUBSTANCE HAZARDOUS FOR THE ENVIRONMENT, LIQUID, NON-SPECIFIED, class 9, packaging group III**. The relevant packaging instruction P001 (chapter 4.1.4.1, volume II) has been specified for its packaging. A special regulation No. 274 (chapter 3.1.2.8.) has been specified according to the same table. The number and name for solid substance are: **UN 3077, SUBSTANCE HAZARDOUS FOR THE ENVIRONMENT, SOLID, NON-SPECIFIED, class 9, packaging group III**, and respectively packaging instruction P002, with the same special regulation No. 274.
3. The transport vehicles require two neutral light-reflecting orange plates, placed on the vehicle's front and back /**ADR, volume II, chapter 5.3**/.
4. The documents necessary for your transportation are, as follows:
  - **transport document**, containing description of the cargo name, UN number, packaging group, cargo quantity, name and address of sender and recipient, contact telephones (chapters 5.4 and 8.1 of ADR);
  - **ADR certificate for the driver /chapter 8.2, ADR, volume II/** of completed basic training course and successfully passed examination;
  - **written instruction in case of accident (chapter 5.4.3, ADR, volume II)**, issued by the relevant chemical enterprise.

**GENERAL DIRECTOR**  
**PLAMEN TSALKOV, /Sgt. /**  
**Seal of AEBTRI, Sofia**

UIC 000704481; Tax No. 1221008827; Bank accounts: IBAN BG20BACX96601086795202, BIC BACXBGSF (BGN),  
IBAN BG37BACX96601419756902, BIC BACXGSF (EUR), HVB Biochim – Beli Brezi Branch.

I, the undersigned Hristo Zahariev Hristov, do hereby certify that the foregoing translation from Bulgarian into English of the attached document is true and correct to the best of my knowledge. The translation consists of 1 (one) page.

Sworn translator:

  
Hristo Zahariev Hristov, Personal ID No. 7404075807