

# Safety Data Sheet

## Conforms to OSHA Hazard Communication Standard (HCS)

### 29CFR 1910.1200

Printing date 04/09/2014

Reviewed on 04/09/2014

## 1 Identification of the Substances/Preparation and of the Company/Undertaking

- **Product identifier**
- **Product name:** TYZOR® GBA
- **Relevant identified uses of the substance or mixture and uses advised against**  
Catalysts/Cross-linking agent. Not for consumer use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Dorf Ketal Specialty Catalysts LLC  
11200 Westheimer Road  
Suite 400  
Houston, Texas 77042  
Phone= +1 713 343 2377  
Fax= +1 832 649 7615  
Email: ehss@dorketal.com
- **Emergency telephone number:**  
For Chemical Emergency ONLY (spill, leak, fire, exposure or accident) call Chemtrec at +1 (703) 527 3887 or Chemtrec India at 000-800-100-7141. DORF KETAL Emergency Control Room +91 22-65271001.

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Flam. Liq. 2 H225 Highly flammable liquid and vapor.  
STOT SE 2 H371 May cause damage to organs.  
Eye Dam. 1 H318 Causes serious eye damage.  
Acute Tox. 4 H302 Harmful if swallowed.
- **OSHA/HCS status**  
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### · Label elements

### · GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

### · Hazard pictograms



GHS02 GHS05 GHS07 GHS08

### · Signal word Danger

### · Hazard-determining components of labeling:

Methanol  
butan-1-ol  
propan-2-ol

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**· Hazard statements**

Highly flammable liquid and vapor.  
 Harmful if swallowed.  
 Causes serious eye damage.  
 May cause damage to organs.

**· Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
 Do not breathe dust/fume/gas/mist/vapours/spray.  
 Use explosion-proof electrical/ventilating/lighting/equipment.  
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
 Continue rinsing.  
 Store locked up.  
 Dispose of contents/container in accordance with local/regional/national/international regulations.

**· Classification system:****· NFPA ratings (scale 0 - 4)**

Health = 2  
 Fire = 3  
 Reactivity = 0

**· HMIS-ratings (scale 0 - 4)**

Health = \*2  
 Fire = 3  
 Reactivity = 0

**· Other hazards** No information available.

## 3 Composition/information on ingredients

**· Chemical characterization: Mixture**

**· Description:** Mixture of the substances listed below with nonhazardous additions/ unknown toxicity.

**· Dangerous components:**

67-63-0	propan-2-ol	Flam. Liq. 2, H225 Eye Irrit. 2, H319; STOT SE 3, H336	13-30%
67-56-1	Methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	3-7%

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71-36-3	butan-1-ol	Flam. Liq. 3, H226 Eye Dam. 1, H318 Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335-H336	3-7%
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## 4 First-aid measures

### · Description of first aid measures

#### · General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take affected persons out into the fresh air.

Do not leave affected persons unattended.

#### · Inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

#### · Skin Contact:

Immediately rinse with water.

If skin irritation continues, consult a doctor.

#### · Eye Contact:

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids.

Check for and remove any contact lenses.

Rinse opened eye for several minutes under running water. Then consult a doctor.

#### · Ingestion:

Immediately call a doctor.

Rinse out mouth and then drink plenty of water.

Do not induce vomiting.

#### · Most important symptoms and effects, both acute and delayed

Causes eye and skin irritation.

Harmful if swallowed. Irritating to mouth, throat and stomach.

Cause damage to organ.

#### · Indication of any immediate medical attention and special treatment needed

Show this safety data sheet to the doctor in attendance. Treat symptomatically.

## 5 Fire-fighting measures

· **Extinguishing media** In case of fire use the following suitable extinguishing agent.

#### · Suitable extinguishing agents:

Foam

Fire-extinguishing powder

Alcohol resistant foam

Carbon dioxide

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- **For safety reasons unsuitable extinguishing agents:**

Water with full jet

Water spray

- **Special hazards arising from the substance or mixture**

Flammable liquid and vapour.

In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbon dioxide

- **Advice for firefighters**

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Wear protective clothing.

Keep away from ignition sources

Ensure adequate ventilation

Wear protective equipment. Keep unprotected persons away.

Use respiratory protective device against the effects of fumes/dust/aerosol.

- **Environmental precautions:**

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**

Stop leak if without risk.

Move containers from spill area.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

## 7 Handling and storage

- **Precautions for safe handling**

Put on appropriate personal protective equipment .

Do not ingest.

Avoid contact with eyes, skin and clothing.

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Avoid breathing vapour or mist.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

- **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- **Conditions for safe storage, including any incompatibilities**

- **Requirements to be met by storerooms and receptacles:**

Avoid storage near extreme heat, ignition sources or open flame.

- **Information about storage in one common storage facility:**

Store away from oxidizing agents.

Store away from foodstuffs.

- **Further information about storage conditions:** Keep receptacle tightly sealed.

- **Specific end use(s)** No further relevant information available.

\*

## 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

**67-63-0 propan-2-ol**

PEL	Long-term value: 980 mg/m <sup>3</sup> , 400 ppm
REL	Short-term value: 1225 mg/m <sup>3</sup> , 500 ppm Long-term value: 980 mg/m <sup>3</sup> , 400 ppm
TLV	Short-term value: 984 mg/m <sup>3</sup> , 400 ppm Long-term value: 492 mg/m <sup>3</sup> , 200 ppm BEI

**67-56-1 Methanol**

PEL	Long-term value: 260 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 325 mg/m <sup>3</sup> , 250 ppm Long-term value: 260 mg/m <sup>3</sup> , 200 ppm Skin
TLV	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm Long-term value: 262 mg/m <sup>3</sup> , 200 ppm Skin; BEI

**71-36-3 butan-1-ol**

PEL	Long-term value: 300 mg/m <sup>3</sup> , 100 ppm
REL	Ceiling limit value: 150 mg/m <sup>3</sup> , 50 ppm Skin

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TLV Long-term value: 61 mg/m<sup>3</sup>, 20 ppm

- **Exposure controls**

- **Appropriate engineering controls:**

Use local exhaust ventilation or other engineering control to maintain airborne levels below exposure limit requirement or guidelines.

If there are no applicable exposure limit requirement or guidelines, general ventilation should be sufficient for most operations.

Local exhaust ventilation may be necessary for some operations.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

- **Breathing equipment:**

Where there is potential for airborne exposures, wear NIOSH approved respiratory protection.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protection device that is independent of circulating air.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

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## \* 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

#### · Appearance:

Form: Liquid

Color: Red

· Odor: Alcohol-like

· Odour threshold: No data available.

· pH-value: No data available

· Melting point/Freezing Point : No data available

· Boiling point/Boiling range: 70 °C (158 °F)

· Flash point: 12 °C (54 °F) (Pensky-Martens)

· Flammability (solid, gaseous): Not applicable.

· Decomposition temperature: No data available.

· Auto ignition temperature Product is not selfigniting.

#### · Explosion limits:

Lower: No data available.

Upper: No data available

· Oxidizing properties No data available.

· Vapor pressure: No data available.

· Relative density at 25 °C (77 °F) 1.02 g/cm<sup>3</sup> (8.512 lbs/gal)

· Vapour density No data available

· Evaporation rate No data available

· Solubility: Soluble in water.

· Partition coefficient (n-octanol/water): No data available

#### · Viscosity:

Dynamic: No data available.

Kinematic: No data available.

## 10 Stability and reactivity

· **Reactivity** Under normal conditions of storage and use, hazardous reactions will not occur.· **Chemical stability** The product is stable under storage at normal ambient temperature.· **Possibility of hazardous reactions** No dangerous reactions known.

#### · Conditions to avoid

Avoid all possible sources of ignition (spark or flame).

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Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

· **Incompatible materials:**

Oxidizing material

Metals

Hydrolyzes in water to form isopropyl alcohol and titanium dioxide.

· **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

· **Information on toxicological effects**· **Acute toxicity:**· **LD/LC50 values that are relevant for classification:****67-63-0 propan-2-ol**

Oral	LD50	5045 mg/kg (Rat)
Dermal	LD50	12800 mg/kg (Rabbit)
Inhalative	LC50	30 mg/l (Rat)

**67-56-1 Methanol**

Oral	LD50	5628 mg/kg (Rat)
Dermal	LD50	15800 mg/kg (Rabbit)

**71-36-3 butan-1-ol**

Oral	LD50	790 mg/kg (Rat)
Dermal	LD50	3400 mg/kg (Rabbit)
Inhalative	LC50	8000 mg/l (Rat)

· **Primary irritant effect:**· **on the skin:** May cause skin irritation with prolonged exposure.· **on the eye:** Strong irritant with the danger of severe eye injury.· **Respiratory/ Skin sensitization:** No sensitizing effects known.· **Germ cell mutagenicity:** No known significant effects or critical hazards.· **Carcinogenicity:** No known significant effects or critical hazards.· **Reproductive toxicity:** No known significant effects or critical hazards.· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

67-63-0 propan-2-ol

3

· **NTP (National Toxicology Program)**

None of the ingredients are listed.

· **Single dose toxicity:** May Cause damage to organs.· **Repeated Dose toxicity** No known significant effects or critical hazard.· **Aspiration hazard** Product is not classified for aspiration hazard.

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· **Other relevant information:** No data available

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** Not classified as hazardous to aquatic life.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Results of PBT and vPvB assessment** Not available
- **Other adverse effects** No further relevant information available.

## 13 Disposal Information

### · **Waste treatment methods**

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

### · **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

### · **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |                                  |   |
|----------------------------------|---|
| · <b>UN-Number</b>               |   |
| · <b>DOT, ADR, IMDG, IATA</b>    | UN1993  |
| · <b>UN proper shipping name</b> |   |
| · <b>DOT</b>                     | Flammable liquids, n.o.s.(Propan-2-ol, Methanol)      |
| · <b>ADR</b>                     | 1993 Flammable liquids, n.o.s.(Propan-2-ol, Methanol) |
| · <b>IMDG, IATA</b>              | FLAMMABLE LIQUID, N.O.S.(Propan-2-ol, Methanol)       |

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· **Transport hazard class(es)**· **DOT**· **Class**

3 Flammable liquids.

· **Label**

3

· **ADR, IMDG, IATA**· **Class**

3 Flammable liquids

· **Label**

3

· **Packing group**· **DOT, ADR, IMDG, IATA**

II

· **Environmental hazards:**· **Marine pollutant:**

No

· **Special precautions for user**

Warning: Flammable liquids

· **Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code**

Not applicable.

## 15 Regulatory information

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

67-63-0 propan-2-ol

67-56-1 Methanol

71-36-3 butan-1-ol

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

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· **Proposition 65**· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

67-56-1 | Methanol

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

71-36-3 | butan-1-ol

D

· **TLV (Threshold Limit Value established by ACGIH)**

67-63-0 | propan-2-ol

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

File name: TYZOR GBA SDS US en APR-09-2014

Superseded SDS date: MAR-28-2011

Change History: Classification and SDS format updated.

· **Abbreviations and acronyms:**

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ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International

Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

APF = Assigned protection factor

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

IOELV: Indicative Occupational Exposure Limit Values

**Disclaimer:**

The data and recommendations presented in this data sheet concerning the use of our product and the materials contain there in are believed to be accurate and are based on information which is considered reliable as of the date hereof. However, the customer should determine the suitability of much material for his purpose before adopting them on a commercial scale. Since the use our product by others is beyond our control, no guarantee, express or implied, is made and no responsibility assumed for the use of this material or the results to be obtained there from. Information on this document is furnished for the purpose of compliance with Government Health and Safety Regulations and shall not be used for any other purposes. Moreover, the recommendations contained in this Safety Data Sheet are not to be constructed as a license to operate under, or a recommendation to infringe, any existing patents, nor should they be confused with state, municipal or insurance requirements, or with national safety codes.