Safety Data Sheet
Conforms to OSHA Hazard Communication Standard (HCS)
29CFR 1910.1200

Printing date 07/21/2014 Version number 2 Reviewed on 07/21/2014

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

· **Product identifier**
· **Product name:** TYZOR® AA
· **Relevant identified uses of the substance or mixture and uses advised against**
Catalysts/Cross-linking agent.Not for consumer application.

· **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@dorfketal.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.

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2 Hazard(s) identification

· **Classification of the substance or mixture**
Flam. Liq. 2 H225 Highly flammable liquid and vapor.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.
· **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 GHS07

· **Signal word** Danger

· **Hazard-determining components of labeling:**
propan-2-ol
· **Hazard statements**
Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness or dizziness.

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· **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
IF ON SKIN (or hair): Remove/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.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.

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3 Composition/information on ingredients

· **Chemical characterization: Mixture**
Mixture of 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	23-40%

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4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Do not leave affected persons unattended.
· **Inhalation:**

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Move exposed person to fresh air.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
Loosen tight clothing such as a collar, tie, belt or waistband.
Get medical attention immediately.

· **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:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting.
If symptoms occur seek medical attention.

· **Most important symptoms and effects, both acute and delayed**
Causes serious eye irritation
May cause drowsiness or dizziness.nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness

· **Indication of any immediate medical attention and special treatment needed**
Show this safety data sheet to the doctor in attendance. Treat symptomatically.

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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
Sand

· **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.
Runoff to sewer may create fire or explosion hazard.
In case of fire, the following can be released:
Carbon monoxide (CO)
Carbon dioxide

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· **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:**
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective clothing.
Keep away from ignition sources
Ensure adequate ventilation
· **Environmental precautions:** Do not allow product to reach sewage system or any water course.
· **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).
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents

7 Handling and storage

· **Precautions for safe handling**
Put on appropriate personal protective equipment .
Do not ingest.
Avoid contact with eyes, skin and clothing.
Avoid breathing vapour or mist.
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:**
Store in a cool location.
Avoid storage near extreme heat, ignition sources or open flame.
· **Information about storage in one common storage facility:** Store away from oxidizing agents.
· **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.

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· **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/m³, 400 ppm
REL	Short-term value: 1225 mg/m³, 500 ppm Long-term value: 980 mg/m³, 400 ppm
TLV	Short-term value: 984 mg/m³, 400 ppm Long-term value: 492 mg/m³, 200 ppm BEI

· **Exposure controls**
· **Appropriate engineering controls:**
Use local exhaust ventilation or other engineering control to maintain airborne levels below exposure limit requirement or guldelines.
If there are no applicable exposure limit requirement or guidelines, general ventilation should be sufficient for most operations.
Local exhaust ventillation 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 and skin.
· **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 protective 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

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· **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

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Yellow to Red
· **Odor:**	Alcohol-like
· **Odour threshold:**	No data available.
· **pH-value:**	No data available
· **Melting point/Freezing Point :**	-20 °C (-4 °F)
· **Boiling point/Boiling range:**	85 °C (185 °F)
· **Flash point:**	12 °C (54 °F) (Closed cup)
· **Flammability (solid, gaseous):**	Not applicable.
· **Decomposition temperature:**	No data available.
· **Auto ignition temperature**	Product is not selfigniting.
· **Explosion limits:**	
Lower:	2 Vol %
Upper:	12 Vol %
· **Oxidizing properties**	No data available.
· **Vapor pressure at 20 °C (68 °F):**	3.5 kPa
· **Relative density at 20 °C (68 °F)**	0.98-1.02 g/cm³ (8.178-8.512 lbs/gal)
· **Vapour density**	No data available
· **Evaporation rate**	No data available

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· **Solubility(water):**	Partially soluble in cold water and hot water.
· **Partition coefficient (n-octanol/water):**	No data available
· **Viscosity:**	
Dynamic:	11 mPas
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).
Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
· **Incompatible materials:**
Reactive or incompatible with the following materials:
Oxidizing material
· **Hazardous decomposition products:**
Under normal conditions of storage and use, hazardous decomposition products should not be produced

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

· **Primary irritant effect:**
· **on the skin:** No irritating effect.
· **on the eye:** Irritating effect.
· **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.

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· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients are listed.

· **NTP (National Toxicology Program)**
None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients are listed.

· **Single dose toxicity:** May cause drowsiness or dizziness.
· **Repeated Dose toxicity** No known significant effects or critical hazard.
· **Aspiration hazard** Product is not classifed for aspiration hazard.
· **Other relevant information:** No data available

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12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No known significant effects or critical hazards.
· **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 whereverpossible. 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.
Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

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· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

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14 Transport information

· **UN-Number**
· **DOT, ADR, IMDG, IATA** UN1219

· **UN proper shipping name**
· **DOT** Isopropanol solution
· **ADR** 1219 Isopropanol solution
· **IMDG, IATA** ISOPROPANOL solution

· **Transport hazard class(es)**

· **DOT**

· **Class** 3 Flammable liquids
· **Label** 3

· **ADR**

· **Class** 3 (F1) Flammable liquids
· **Label** 3

· **IMDG, IATA**

· **Class** 3 Flammable liquids
· **Label** 3

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

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· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Flammable liquids
· **Danger code (Kemler):**	33
· **EMS Number:**	F-E,S-D
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **IMDG**	
· **Limited quantities (LQ)**	1L

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Section 355 (extremely hazardous substances):**
None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **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:**
All ingredients are listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients are listed.

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

None of the ingredients are listed.

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

None of the ingredients are listed.

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

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16 Other information

File name: TYZOR AA SDS US en JUL-21-2014
Superseded SDS date: 28-MAR-2011
Change History: SDS format updated.

· **Abbreviations and acronyms:**
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
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

· **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.