

SAFETY DATA SHEET

According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

· **Product name:** TYZOR® AA-75

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
Catalysts/Cross-linking agent/Adhesion promoters. Not for consumer application.

1.3 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

Only Representative (REACH related)

ReachLaw Ltd, Vänrikinkuja 3,

02600 Espoo, Finland

Tel. +358(0) 9 412 3055

Fax: +358 (0) 9 412 3049

e-mail: sdsin@reachlaw.fi

1.4 Emergency telephone number:

For Chemical Emergency ONLY (in the case of fire, leak, spill, exposure or accident) call CHEMTREC at +1 (703) 527-3887 or CHEMTREC India at 000-800-100-7141. For ALL other emergencies call DORF KETAL Emergency Control Room +9122-65271001.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

· **Classification according to Regulation (EC) No 1272/2008**

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

Eye Dam. 1 H318 Causes serious eye damage.

STOT SE 3 H336 May cause drowsiness or dizziness.

2.2 Label elements

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS02



GHS05



GHS07

· **Signal word** Danger

(Contd. on page 2)

SAFETY DATA SHEET

According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 1)

- **Hazard-determining components of labelling:**

bis(pentane-2,4-dionato-O,O')bis(propan-2-olato)titanium
propan-2-ol

- **Hazard statements**

H225 Highly flammable liquid and vapour.
H318 Causes serious eye damage.
H336 May cause drowsiness or dizziness.

- **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards:** No information available

SECTION 3: Composition/information on ingredients

- **3.2 Mixture**

- **Dangerous components:**

CAS: 17927-72-9 EINECS: 241-866-1	bis(pentane-2,4-dionato-O,O')bis(propan-2-olato)titanium Eye Dam. 1, H318	50-75%
CAS: 67-63-0 EINECS: 200-661-7 Index number: 603-117-00-0	propan-2-ol Flam. Liq. 2, H225 Eye Irrit. 2, H319; STOT SE 3, H336	20-25%

SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information:**

Do not leave affected persons unattended.
Take affected persons out into the fresh air.

- **After inhalation:**

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.

- **After skin contact:**

Immediately rinse with water.
If skin irritation continues, consult a doctor.

(Contd. on page 3)

SAFETY DATA SHEET

**According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010**

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 2)

Remove contaminated clothing and shoes.

Wash clothing before reuse.

Clean shoes thoroughly before reuse.

· **After 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.

· **After swallowing:**

Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel.

Never give anything by mouth to an unconscious person. Get medical attention immediately.

· **4.2 Most important symptoms and effects, both acute and delayed**

Pain, watering, redness. Causes serious eye damage.

May cause burns to mouth, throat and stomach. Stomach pains.

May cause drowsiness or dizziness, nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness

· **4.3 Indication of any immediate medical attention and special treatment needed**

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

SECTION 5: Firefighting measures· **5.1 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

· **5.2 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

· **5.3 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.

(Contd. on page 4)

SAFETY DATA SHEET

**According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010**

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 3)

SECTION 6: Accidental release measures

- **6.1 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

- **6.2 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.

- **6.3 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

- **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 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 fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- **7.2 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 in accordance with local regulations.

Store in a segregated and approved area.

Store away from oxidising agents.

(Contd. on page 5)

SAFETY DATA SHEET

According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 4)

- **Further information about storage conditions:**

Product freeze to form solid precipitate at temperature below 0 °C. Crystals formed by low temperatures go back into solution with light heating and agitation.

Moisture-sensitive material. Once opened, container should be kept under nitrogen blanketing to prevent decomposition.

Store in cool, dry conditions in well sealed receptacles.

Keep container tightly sealed.

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

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**

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

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- **8.2 Exposure controls**

- **8.2.1 Appropriate engineering controls**

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

Local exhaust ventilation may be necessary for some operations.

- **8.2.2 Personal protection:**

- **General protective and hygienic measures:**

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Do not inhale gases / fumes / aerosols.

- **Respiratory protection:**

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

- **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**

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

(Contd. on page 6)

SAFETY DATA SHEET

According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 5)

- **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:**

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.



Tightly sealed goggles

- **Body protection:** Protective work clothing

- **8.2.3 Limitation and supervision of exposure into the environment** No further information available.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **Appearance:**

Form:

Liquid

Colour:

Red

- **Odour:**

Alcohol-like

- **Odour threshold:**

No data available.

- **pH-value:**

No data available.

- **Melting point/Freezing Point:**

- 20 °C

- **Boiling point/Boiling range:**

85 °C

- **Flash point:**

12 °C

- **Flammability (solid, gaseous):**

Not applicable.

- **Auto Ignition temperature:**

Decomposition temperature:

No data available.

- **Self-igniting:**

Product is not selfigniting.

- **Explosive properties :**

Product is not explosive.

- **Explosion limits:**

Lower:

2 Vol %

Upper:

12 Vol %

- **Oxidising properties**

No data available.

- **Vapour pressure at 20 °C:**

3,5 kPa

- **Relative density at 20 °C**

1 g/cm³

- **Vapour density**

No data available.

- **Evaporation rate**

No data available.

- **Solubility:**

Partly soluble in water

(Contd. on page 7)

SAFETY DATA SHEET

According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 6)

- **Partition coefficient (n-octanol/water):** No data available.
- **Viscosity:**
 - Dynamic:** 11 mPas
 - Kinematic:** No data available.
- **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** Under normal conditions of storage and use, hazardous reactions will not occur.
- **10.2 Chemical stability** The product is stable under storage at normal ambient temperature.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 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.
- **10.5 Incompatible materials:**
Reactive or incompatible with the following materials:
Oxidizing materials
Hydrolyzes in water to form 2-propanol and titanium dioxide.
- **10.6 Hazardous decomposition products:**
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**

· **LD/LC50 values relevant for classification:****67-63-0 propan-2-ol**

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

17927-72-9 bis(pentane-2,4-dionato-O,O')bis(propan-2-olato)titanium

Oral	LD50	2840 mg/kg (Rat)
------	------	------------------

- **Skin corrosion/irritation:** No irritating effect.
- **Serious eye damage/irritation:**
Causes serious eye damage.
- **Respiratory or 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.
- **Specific target organ toxicity-single exposure** May cause drowsiness or dizziness.

(Contd. on page 8)

SAFETY DATA SHEET

According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 7)

- **Specific target organ toxicity-repeated exposure** No known significant effects or critical hazards.
- **Aspiration hazard** Product is not classified for aspiration hazard.
- **Other relevant information:** No data available

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No known significant effects or critical hazards.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment** Not available
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 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.
- **Product / Packaging disposal:**
Must not be disposed 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.
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|------------------------------------|---------------------------------------------------------------------------------------|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | UN1993 |
| · 14.2 Proper Shipping Name | |
| · ADR | 1993 FLAMMABLE LIQUID, N.O.S. (mixture, contains Propan-2-ol), special provision 640D |
| · IMDG, IATA | FLAMMABLE LIQUID, N.O.S. (mixture, contains Propan-2-ol) |

(Contd. on page 9)

SAFETY DATA SHEET

According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 8)

· **14.3 Transport hazard class(es)**· **ADR**

- **Class** 3 (F1) Flammable liquids.
- **Label** 3

· **IMDG, IATA**

- **Class** 3 Flammable liquids.
- **Label** 3

· **14.4 Packing group**

- **ADR, IMDG, IATA** II

· **14.5 Environmental hazards:**

- **Marine pollutant:** Not applicable

· **14.6 Special precautions for user**

- **Danger code (Kemler):** Warning: Flammable liquids.
- **EMS Number:** 33
- **EMS Number:** F-E, S-E

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable.

· **Transport/Additional information:**

- **ADR**
- **Reportable Quantity (RQ)** 1L
- **Transport category** 2
- **Tunnel restriction code** D/E

· **IMDG**

- **Limited quantities (LQ)** 1L

*

SECTION 15: Regulatory information· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV - List of substances subject to authorization
substance of very high concern: None of the components are listed.

(Contd. on page 10)

SAFETY DATA SHEET

According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 9)

- **EINECS listing** All ingredients are listed.
- **Chemical safety assessment** Chemical safety assessment has not been carried out.
- **Other information:**
List of Poison Centers in Europe:
AUSTRIA (Vienna Wien) +43 1 40 400 2222; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409 / +359 887 435 325; CZECH REPUBLIC (Prague Praha) +42 2 2491 9293 or +42 2 2495402; DENMARK (Copenhagen) +45 35 31 54 04; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 05 48 48; GERMANY (Berlin) +49 30 450 653565; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) +36 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 2 36 20 52, +370 2 36 202; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) +47 22 591300; POLAND (Gdansk) +48 58 301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143 (for use only in Portugal), +351 21 330 3284; ROMANIA (Bucharest) +40 21 230 8000; SLOVAKIA Bratislava) +421 2 54 77 4 166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) +46 8 33 12 31 (International) 112 (National); UNITED KINGDOM (London)0870 243 2241.

*

SECTION 16: Other information

File name: TYZOR AA-75 SDS EEA en DEC-04-2015

Superseded SDS date: JUL-16-2015

Change History: Storage information updated.

- **Classification Procedure:**
As per Regulation (EC) No 1272/2008 on classification, labelling and packaging (CLP) of substances and mixtures
- **Abbreviations:**
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 Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
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

(Contd. on page 11)

**SAFETY DATA SHEET**

**According to Annex II of Regulation (EC) No. 1907/2006
(REACH), as amended by Annex I to Commission Regulation
(EU) No. 453/2010**

Printing Date: 04.12.2015

Version number 4

Revision Date: 04.12.2015

Product name: TYZOR® AA-75

(Contd. of page 10)

purpose before adopting them on a commercial scale. Since the use of 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.