# VITA YZ LIQUIDS

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

### 1.1 PRODUCT IDENTIFIER

#### 1.1.1 COMMERCIAL PRODUCT NAME

VITA YZ HT/ST/XT SHADE LIQUIDS / YZ EFFECT LIQUIDS EZ0Cxyyy(y), EZ0Cxxxxx (ausgenommen EZ0C18110, EZ0C18350, EZ0C18920)

#### 1.1.2 PRODUCT IDENTIFIER

#### 1.2 RELEVANT IDENTIFIED USES FOR THE SUBSTANCE OR MIXTURE

- **1.2.1 IDENTIFIED USES** Liquid Dye for Zircon

### 1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

#### 1.3.1 MANUFACTURER

Zirkonzahn srl, Via An der Ahr 7, IT 39030 Gais

#### 1.3.2 SUPPLIER

Zirkonzahn srl, Via An der Ahr 7, IT 39030 Gais

#### 1.3.3 TOX EMERGENCY CALL

+39 0474 066 660

## 2. HAZARD(S) IDENTIFICATION

### 2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

#### 2.1.1 GHS-US CLASSIFICATION

- **Skin corrosion/irritation** Category 1A Skin burns
- **Serious eye damage/eye damage** Category 1
- **Irritation** Category 1
- **Specific target organ toxicity (single exposure)** Category 3
- **Irritation Category 3**
- **Full text of H statements: see section 16**

### 2.2 GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

#### 2.2.1 LABELLING IN ACCORDANCE GHS-US LABELING

#### 2.2.1.1 HAZARD PICTOGRAMS (GHS-US)

- GHS05 - **DANGER**
- GHS07

#### 2.2.1.2 SIGNAL WORD (GHS-US)

- **H314** Causes severe skin and eye damage
- **H318** Causes serious eye damage
- **H335** May cause respiratory irritation

#### 2.2.1.3 HAZARD STATEMENTS (GHS-US)

- **P260 – Do not breathe mist, vapors, spray**
- **P264 – Wash hands, forearms and face thoroughly after handling**
- **P271 – Use only outdoors or in a well-ventilated area**
- **P280 – Wear protective gloves, protective clothing, eye protection, face protection**
- **P301+P330+P331 – If swallowed: rinse mouth. Do NOT**
2.3 OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION
2.4 UNKNOWN ACUTE TOXICITY (GHS-US)

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 SUBSTANCES
3.2 MIXTURES

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Proportion (% weight)</th>
<th>CAS – No.</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (III) nitrate nonahydrate</td>
<td>5 - 20</td>
<td>7782-61-8</td>
<td>Ox. Sol. 3, H272</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2, H315</td>
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<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2, H319</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3; H335</td>
</tr>
<tr>
<td>Erbium trinitrate hydrate</td>
<td>25 - 70</td>
<td>100641-14-3</td>
<td>Ox. Sol. 2, H272</td>
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<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3; H335</td>
</tr>
<tr>
<td>Neodymium trinitrate hexahydrate</td>
<td>25 - 50</td>
<td>16454-60-7</td>
<td>Ox. Sol. 3, H272</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

4. FIRST AID MEASURES

4.1 DESCRIPTION

4.1.1 EYE CONTACT
Rinse eyes with water as a precaution. Immediately call a poison center or doctor/physician.

4.1.2 SKIN CONTACT
Wash skin with plenty of water. Call a physician immediately.

4.1.3 INGESTION
Call a poison center/doctor/physician if you feel unwell.

4.1.4 INHALATION
Remove person to fresh air and keep comfortable for breathing.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS (ACUTE AND DELAYED)

4.3 IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT, IF NECESSARY
Treat symptomatically.

5. FIRE FIGHTING MEASURES
5.1 SUITABLE EXTINGUISHING DEVICES

5.2 UNSUITABLE EXTINGUISHING DEVICES
No information available

5.3 SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
Reactivity: The product is non-reactive under normal conditions of use, storage and transport.
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES
6.1.1 FOR NON-EMERGENCY PERSONNEL
Emergency procedures: Ventilate spillage area. Do not breathe mist, vapors, spray.

6.1.2 FOR EMERGENCY RESPONDERS
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”. Avoid sub-soil penetration. Prevent entry to sewers and public waters. Avoid release to the environment.

6.2 ENVIRONMENTAL PRECAUTIONS
Avoid sub-soil penetration. Prevent entry to sewers and public waters. Avoid release to the environment.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP
Take up liquid spill into absorbent material. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Disposal must be done according to official regulations.

6.3.2 OTHER INFORMATION
Information for safe handling. See section 7. Concerning personal protective equipment to use, see section 8. For further information refer to section 13.

6.4 REFERENCE TO OTHER SECTIONS
Information for safe handling. See section 7. Concerning personal protective equipment to use, see section 8. For further information refer to section 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING
Ensure good ventilation of the work station. Wear personal protective equipment.
Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Store in a well-ventilated place. Keep cool.

7.2 HYGIENE MEASURES
Keep away from food, drink and animal feeding stuffs.

7.3 STORAGE
Keep only in original container. Store in a closed container.

7.4 INFORMATION ABOUT STORAGE IN ONE COMMON STORAGE FACILITY
Keep only in original container. Store in a closed container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS
Iron (III) nitrate nonhydrate (7782-61-8) – not applicable

8.2 APPROPRIATE ENGINEERING CONTROL
Ensure good ventilation of the work station.

8.3 ENVIRONMENTAL EXPOSURE CONTROLS
Avoid release to the environment. Avoid sub-soil penetration. Do not allow into drains or water courses.

8.4 INDIVIDUAL PROTECTION MEASURES/PERSONAL PROTECTIVE EQUIPMENT
Corrosionproof clothing

8.4.1 PERSONAL PROTECTIVE EQUIPMENT
Acid-resistant clothing

8.4.2 MATERIALS FOR PROTECTIVE CLOTHING
Wear suitable gloves resistant to chemical penetration. EN 374. Choosing the proper glove is a decision that depends not only
8.4.4 EYE PROTECTION
Sealed safety goggles

8.4.5 SKIN AND BODY PROTECTION
Wear suitable protective clothing

8.4.6 RESPIRATORY PROTECTION
Not required for normal conditions of use. In case of insufficient ventilation, wear suitable respiratory equipment

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

9.1.1 FORM Liquid
9.1.2 COLOUR Different according to colouring
9.1.3 ODOR Odourless
9.1.4 ODOR THRESHOLD No data available
9.1.5 pH 1.40 – 4.80
9.1.6 FREEZING POINT Not data available
9.1.7 MELTING POINT Not applicable
9.1.8 BOILING POINT Not data available
9.1.9 FLASH POINT No data available
9.1.10 RELATIVE EVAPORATION RATE (BUTYL ACETATE = 1) Not data available
9.1.11 FLAMMABILITY (SOLID, GAS) Not applicable
9.1.12 VAPOR PRESSURE Not data available
9.1.13 RELATIVE VAPOR DENSITY AT 20°C Not data available
9.1.14 RELATIVE DENSITY Not data available
9.1.15 SOLUBILITY Not data available
9.1.16 LOG POW Not data available
9.1.17 AUTO-IGNITION TEMPERATURE Not data available
9.1.18 DECOMPOSITION TEMPERATURE Not data available
9.1.19 VISCOSITY, KINEMATIC Not data available
9.1.20 VISCOSITY, DYNAMIC Not data available
9.1.21 EXPLOSION LIMITS Not data available
9.1.22 EXPLOSIVE PROPERTIES Not data available
9.1.23 OXIDIZING PROPERTIES Not data available
9.2 ADDITIONAL INFORMATION No additional information available

10. STABILITY AND REACTIVITY
10.1 REACTIVITY
The product is non-reactive under normal conditions of use, storage and transport.

10.2 CHEMICAL STABILITY
Stable under normal conditions.

10.3 POSSIBLE DANGEROUS REACTIONS
No dangerous reactions known under normal conditions of use.

10.4 CONDITIONS TO AVOID
None under recommended storage and handling conditions (see section 7)

10.5 INCOMPATIBLE MATERIALS
Strong bases.

10.6 HAZARDOUS DECOMPOSITION
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

11.1.1 ACUTE TOXICITY
Not classified (Based on available data, the classification criteria are not met)

| Iron (III) nitrate nonahydrate (7782-61-8) |
|-----------------------------------------|----------------------------------|
| LD50 oral rat                          | 3250 mg/kg body weight           |
| ATE US (oral)                          | 3250 mg/kg body weight           |

11.1.2 SKIN CORROSION/IRRITATION
Causes severe skin burns and eye damage.

11.1.3 SERIOUS EYE DAMAGE/IRRITATION
Causes serious eye damage
pH: 1.40 – 4.80

11.1.4 RESPIRATORY OR SKIN SENSITISATION
Not classified
(Based on available data, the classification criteria are not met)

11.1.5 GERM CELL MUTAGENICITY
Not classified
(Based on available data, the classification criteria are not met)

11.1.6 CARCINOGENICITY
Not classified
(Based on available data, the classification criteria are not met)

11.1.7 REPRODUCTIVE TOXICITY
Not classified
(Based on available data, the classification criteria are not met)

11.1.8 SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE
May cause respiratory irritation

11.1.9 SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE
Not classified
(Based on available data, the classification criteria are not met)

11.1.10 ASPIRATION HAZARD
Not classified
(Based on available data, the classification criteria are not met)

12. ECOLOGICAL INFORMATION

12.1 TOXICITY
Ecology – general: Before neutralisation, the product may represent a danger to aquatic organisms. May cause pH changes in aqueous ecological systems.

12.2 PERSISTENCE AND DEGRADABILITY
Not applicable for inorganic substances.

12.3 BIOACCUMULATIVE POTENTIAL
Not applicable for inorganic substances.

12.4 MOBILITY IN SOIL
Ecology – soil: May cause pH changes in aqueous ecological systems.

12.5 OTHER ADVERSE EFFECTS
Effect on the global warming: No known effects from this product.

GWPmix comment: No known effects from this product.
13. DISPOSAL CONSIDERATIONS

13.1 DISPOSAL METHODS

Waste treatment methods: Disposal must be done according to official regulations. Comply with applicable regulations. Do not discharge into drains or the environment.

14. TRANSPORT INFORMATION

14.1 DEPARTMENT OF TRANSPORTATION (DOT)
IN ACCORDANCE WITH DOT

14.1.1 TRANSPORT DOCUMENT DESCRIPTION
UN2801 Dyes, liquid, corrosive, n.o.s., 8, II

14.1.2 UN-No. (DOT)
UN2801

14.1.3 PROPER SHIPPING NAME (DOT)
Dyes, liquid, corrosive, n.o.s.

14.1.4 CLASS (DOT)
8 – Class 8 – Corrosive material 49 CFR 173.136

14.1.5 PACKING GROUP (DOT)
II – Medium Danger

14.1.6 HAZARD LABELS (DOT)
8 – Corrosive

14.1.7 DOT PACKAGING NON BULK (49 CFR 173.xxx)
202

14.1.8 DOT PACKAGING BULK (49 CFR 173.xxx)
242

14.1.9 DOT SYMBOLS
G-Identifies PSN requiring a technical name

14.1.10 DOT SPECIAL PROVISIONS (49 CFR 172.102)
11 - The hazardous material must be packaged as either a liquid or a solid, as appropriate, depending on its physical form at 55 C (131 F) at atmospheric pressure. B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.
IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
T11 - 6 178.274(d)(2) Normal............. 178.275(d)(3)

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where:
tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

14.1.11 DOT PACKAGING EXCEPTIONS (49 CFR 173.xxx)
154

14.1.12 DOT QUANTITY LIMITATIONS PASSENGER AIRCRAFT/RAIL (49 CFR 173.27)
1 L
14.1.13 DOT QUANTITY LIMITATIONS CARGO AIRCRAFT ONLY
(49 CFR 175.75) 30 L

14.1.14 DOT VESSEL STORAGE LOCATION A - The material may be stowed ‘on deck’ or ‘under deck’ on a cargo vessel and on a passenger vessel

14.1.15 EMERGENCY RESPONSE GUIDE (ERG) NUMBER 14.1.16 OTHER INFORMATION No supplementary information available.
14.1.17 TDG Not applicable
14.1.18 TRANSPORT BY SEA

14.1.18.1 TRANSPORT DOCUMENT DESCRIPTION (IMDG) UN 2801 DYE, LIQUID, CORROSIVE, N.O.S. (Iron(III) nitrate nonahydrate; Chromic nitrate nonahydrate; Praseodymium(III) nitrate hexahydrate; Erbium trinitrate hydrate; Neodymium trinitrate hexahydrate), 8, II

14.1.18.2 UN-No. (IMDG) 2801
14.1.18.3 PROPER SHIPPING NAME (IMDG) DYE, LIQUID, CORROSIVE, N.O.S.
14.1.18.4 CLASS (IMDG) 8 - Corrosive substances
14.1.18.5 PACKING GROUP (IMDG) II - substances presenting medium danger
14.1.18.6 LIMITED QUANTITIES (IMDG) 1 L

14.1.19 AIR TRANSPORT

14.1.19.1 TRANSPORT DOCUMENT DESCRIPTION (IATA) UN 2801 Dye (intermediate), liquid, corrosive, n.o.s. (Iron(III) nitrate nonahydrate; Chromic nitrate nonahydrate; Praseodymium(III) nitrate hexahydrate; Erbium trinitrate hydrate; Neodymium trinitrate hexahydrate), 8, II

14.1.19.2 UN-No. (IATA) 2801
14.1.19.3 PROPER SHIPPING NAME (IATA) Dye (intermediate), liquid, corrosive, n.o.s.
14.1.19.4 CLASS (IATA) 8 – Corrosives
14.1.19.5 PACKING GROUP (IATA) II – Medium Danger

15. REGULATORY INFORMATION

15.1 US FEDERAL REGULATIONS SARA Section 311/312 Hazard Classes – Not listed
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2 INTERNATIONAL REGULATIONS No additional information available

15.3 US STATE REGULATIONS California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

16. OTHER INFORMATION
FULL TEXT OF H-PHRASES

<table>
<thead>
<tr>
<th>H272</th>
<th>May intensify fire; oxidizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H315</td>
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ABBREVIATIONS AND ACRONYMS

ADN: European agreement concerning the international carriage of dangerous goods by inland waterways
ADR: European agreement concerning the international carriage of dangerous goods by road
ATE: Acute toxicity estimate
BCF: Bioconcentration factor
CLP: Classification labelling packaging regulation; Regulation (EC) No 1272/2008
DMEL: Derived minimal effect level
DNEL: Derived-No effect level
DPD: Dangerous preparations directive 1999/45/EC
GHS: Globally harmonized system of classification and labelling of chemicals
IARC: International agency for research on cancer
EC50: Median effective concentration
IATA: International air transport association
IMDG: International maritime dangerous goods
LC50: Median lethal concentration
LD50: Median lethal dose
LOAEL: Lowest observed adverse effect level
NOAEL: No-Observed adverse effect level
NOEC: No-Observed effect concentration
OECD: Organisation for economic Co-operation and development
PBT: Persistent bioaccumulative toxic
PNEC: Predicted No-Effect concentration
REACH: Registration, evaluation, authorisation and restriction of chemicals regulation (EC) No 1907/2006
RID: Regulations concerning the international carriage of dangerous goods by rail
SDS: Safety data sheet
STP: Sewage treatment plant
TLM: Median tolerance limit
vPvB: Very persistent and very bioaccumulative

The aforementioned data correspond to our present state of knowledge and experience. The material safety data sheet serves as description of the products with regards to its necessary safety measures. The indications do not have the meaning of guarantees on properties.

Department issuing data specification sheet:
Zirkonzahn srl,
Via An der Ahr 7,
IT 39030 Gais