Zirkonzahn
Human Zirconium Technology

SI0373
Date of issue: 16.04.2018
In conformity with US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

VITA YZ HT SHADE LIQUIDS

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

1.1 PRODUCT IDENTIFIER

1.1.1 COMMERCIAL PRODUCT NAME	VITA YZ HT SHADE LIQUIDS
1.1.2 PRODUCT IDENTIFIER	EZ0Cxyyyyy (except EZ0CY8110, EZ0CY8350, EZ0CY8920)

1.2 RELEVANT IDENTIFIED USES FOR THE SUBSTANCE OR MIXTURE

1.2.1 IDENTIFIED USES	Liquid Dye for zirconia

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

1.3.1 MANUFACTURER	Zirkonzahn S.r.l., Zona Industriale „An der Ahr“ 7, IT 39030 Gais
1.3.2 SUPPLIER	Zirkonzahn S.r.l., Zona Industriale „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	H314	Causes severe skin burns and eye damage
Serious eye damage Category 1	H318	Causes serious eye damage
Specific target organ toxicity (single exposure) Category 3	H335	May cause respiratory irritation

Full text of H statements: see section 16.

2.2 GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

2.2.1 LABELLING IN ACCORDANCE WITH (GHS-US) LABELLING

2.2.1.1 HAZARD PICTOGRAMS (GHS-US)


GHS05


GHS07

2.2.1.2 SIGNAL WORD (GHS-US) DANGER

2.2.1.3 HAZARD STATEMENTES (GHS-US)	H314 – Causes severe skin burn and eye damage. H318 – Causes serious eye damage. H335 – May cause respiratory irritation.
2.2.1.4 PRECAUTIONARY STATEMENTS (GHS-US)	P260 – Do not breathe mist, vapours, 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 induce vomiting. P303+P361+P353 – If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340 – If inhaled: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 – If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 – Immediately call a POISON CENTER, a doctor. P321 – Specific treatment. P363 – Wash contaminated clothing before reuse. P403+P233 – Store in a well-ventilated place. Keep container tightly closed. P405 – Store locked up. P501 – Dispose of contents/container to an approved waste disposal plant.
2.3 OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION	No additional information available.
2.4 UNKNOWN ACUTE TOXICITY (GHS-US)	Not applicable.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 SUBSTANCES — Not applicable.

3.2 MIXTURES

Denomination	Proportion (% weight)	CAS – No.	Classification
Iron(III) nitrate nonahydrate	5 – 10 %	7782-61-8	Ox. Sol. 3, H272 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3; H335
Erbium(III) nitrate hydrate	25 – 50 %	100641-14-3	Ox. Sol. 2, H272 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3; H335
Neodymium(III) nitrate hexahydrate	25 – 50 %	16454-60-7	Ox. Sol. 3, H272 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3; H335

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)	May cause severe burns.
4.3 IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT, IF NECESSARY	Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 SUITABLE EXTINGUISHING DEVICES	Water spray. Dry powder. Foam. Carbon dioxide.
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.
5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS	Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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, vapours, 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.
6.2 ENVIROMENTAL 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	
6.3.1 METHODS FOR CLEANING UP	Take up liquid spill into absorbent material. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.
6.3.2 OTHER INFORMATION	Disposal must be done according to official regulations.
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.
7.2 HYGIENE MEASURES	Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
7.3 STORAGE	Store in a well-ventilated place. Keep cool.
7.4 INFORMATION ABOUT STORAGE IN ONE COMMON STORAGE FACILITY	Keep away from food, drink and animal feeding stuffs.
7.5. SPECIAL RULES ON PACKAGING	Keep only in original container. Store in a closed container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS	Iron(III) nitrate nonahydrate (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	
8.4.1 PERSONAL PROTECTIVE EQUIPMENT	Corrosion-proof clothing.
8. 4.2 MATERIALS FOR PROTECTIVE CLOTHING	Acid-resistant clothing.
8. 4.3 HAND PROTECTION	Wear suitable gloves resistant to chemical penetration (EN 374). Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. The exact break-through time has to be found out by the manufacturer of the protective gloves and has to be observed. Gloves must be replaced after each use and whenever signs of wear or perforation appear.
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 ODOUR	Odourless.
9.1.4 ODOUR THRESHOLD	No data available.
9.1.5 PH	1,40 – 4,80
9.1.6 FREEZING POINT	No data available.
9.1.7 MELTING POINT	Not applicable.
9.1.8 BOILING POINT	No data available.
9.1.9 FLASH POINT	No data available.
9.1.10 RELATIVE EVAPORATION RATE	No data available.
9.1.11 FLAMMABILITY (SOLID, GAS)	Not applicable.
9.1.12 VAPOUR PRESSURE	No data available.
9.1.13 RELATIVE VAPOUR DENSITY AT 20 °C	No data available.
9.1.14 RELATIVE DENSITY	No data available.
9.1.15 SOLUBILITY	No data available.
9.1.16 PARTITION COEFFICIENT N-OCTANOL/WATER	No data available.
9.1.17 AUTO-IGNITION TEMPERATURE	No data available.
9.1.18 DECOMPOSITION TEMPERATURE	No data available.
9.1.19 VISCOSITY, KINEMATIC	No data available.
9.1.20 VISCOSITY, DYNAMIC	No data available.
9.1.21 EXPLOSION LIMITS	No data available.
9.1.22 EXPLOSIVE PROPERTIES	No data available.
9.1.23 OXIDISING PROPERTIES	No 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	
LD50	3250 mg/kg body weight
ATE US	3250 mg/kg body weight

11.1.2 SKIN CORROSION/IRRITATION	Causes severe skin burns and eye damage. pH: 1,40 – 4,80
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 CARCIOGENICITY	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. GWP mix 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 DEPARMENT OF TRANSPORTATION (DOT)
IN ACCORDANCE WITH DOT

14.1.1 TRANSPORT DOCUMENT DESCRIPTION	UN2801 Dye, 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: 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: 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	154
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, Chromium(III) nitrate nonahydrate, Praseodymium(III) nitrate hexahydrate, Erbium(III) nitrate hydrate, Neodymium(III) nitrate 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, Chromium(III) nitrate nonahydrate, Praseodymium(III) nitrate hexahydrate, Erbium(III) nitrate hydrate, Neodymium(III) nitrate 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

16.1 REVISION DATE 16.04.2018

FULL TEXT OF H-PHRASES

H272	May intensify fire; oxidiser.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

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 US: Acute Toxicity Estimate (United States)
BCF: Bioconcentration Factor
CLP: Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL: Derived Minimal Effect Level
DNEL: Derived-No Effect Level
DOT: Department of Transportation (United States)
DPD: Dangerous Preparations Directive 1999/45/EC
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
GWP: Global Warming Potential
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
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet
STP: Sewage Treatment Plant
TDG: Transportation of Dangerous Goods
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 S.r.l.,
Zona Industriale „An der Ahr“ 7,
IT 39030 Gais