1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : **ZIRCONYL NITRATE**
Product code : 19980
Identification of the product : ZIRCONYL NITRATE
CAS No : 14985-18-3
Synonyms : Zirconium(IV) oxynitrate hydrate

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3. Details of the supplier of the safety data sheet

Company identification

MOLYCHEM INDIA LLP
Office: Maker Tower 'E', 41-A2, 4th Floor, Above Maker Arcade, Cuffe Parade, Mumbai 400 005 (INDIA)
Tel: +91 22 4066 8111, 2205 7772 .
Email : info@molychem.net
Works: Plot No. B/9, Badlapur M.I.D.C., OPP.Shobhavat Textile Co., Kulgaon, Badlapur (E), Dist.-Thane-421 503.

1.4. Emergency telephone number

Emergency number : +91 22 4066 8111 (10:00am - 6:00 pm)

2. Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Oxidising Solids, Category 2	H272
Skin corrosion/irritation, Category 1	H314

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Full text of classification categories and H statements : see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS03



GHS05

Signal word (CLP)	: Danger
Hazard statements (CLP)	: H272 - May intensify fire; oxidiser H314 - Causes severe skin burns and eye damage
Precautionary statements (CLP)	: P220 - Keep/Store away from clothing/…/combustible materials P280 - Wear protective gloves/protective clothing/eye protection/face protection 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/doctor/…

2.3. Other hazards

No additional information available

3. Composition/information on ingredients

3.1. Substances

Name	: ZIRCONYL NITRATE
CAS-No	: 14985-18-3

3.2. Mixtures

Not applicable

4. First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Assure fresh air breathing. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact	: Wash with plenty of soap and water.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: Causes severe skin burns and eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Explosion hazard : Heating may cause a fire or explosion.

5.3 Advice for firefighters

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Use personal protective equipment as required.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers..

6.4. Reference to other sections

No additional information available

7. Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid dust formation. Provide good ventilation in process area to prevent formation of vapour.

Hygiene measures : Wash hands and other exposed areas with mild soap and

water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep container tightly closed. Store in original container. Keep container tightly closed. Protect from moisture.

Storage away from : Direct sunlight. Air contact. Moisture.

7.3. Specific end use(s)

No additional information available

8. Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Eye protection : Chemical goggles or safety glasses
Hand protection : Wear protective gloves
Skin protection : Wear suitable protective clothing
Respiratory protection : wear respiratory protection.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Solid
Appearance : powder or chunk.
Molecular mass : 231.23 g/mol
Colour : White to off white
Odour : No data available
Odour threshold : No data available
pH : No data available
Relative evaporation rate : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : No data available

Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: No data available
Solubility	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

10. Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Direct sunlight. Air contact. Moisture.

10.5. Incompatible materials

Oxidizing agent.

10.6 Hazardous decomposition products

No additional information available

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Serious eye damage, category 1, implicit
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified

STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

12. Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5 Results of PBT and vPvB assessment

No additional information available

12.6 Other adverse effects

No additional information available

13. Disposal considerations

13.1. Waste treatment methods

No additional information available

14. Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number

UN-No. (ADR)	: 3085
UN-No. (IMDG)	: 3085
UN-No. (IATA)	: 3085
UN-No. (ADN)	: 3085
UN-No. (RID)	: 3085

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: OXIDIZING SOLID, CORROSIVE, N.O.S.
Proper Shipping Name (IMDG)	: OXIDIZING SOLID, CORROSIVE, N.O.S.
Proper Shipping Name (IATA)	: OXIDIZING SOLID, CORROSIVE, N.O.S.
Proper Shipping Name (ADN)	: OXIDIZING SOLID, CORROSIVE, N.O.S.

Proper Shipping Name (RID)	: OXIDIZING SOLID, CORROSIVE, N.O.S.
Transport document description (ADR)	: UN 3085 OXIDIZING SOLID, CORROSIVE, N.O.S., 5.1 (8), II, (E)
Transport document description(IMDG)	: UN 3085 OXIDIZING SOLID, CORROSIVE, N.O.S., 5.1 (8), II
Transport document description (IATA)	: UN 3085 OXIDIZING SOLID, CORROSIVE, N.O.S., 5.1, II
Transport document description (ADN)	: UN 3085 OXIDIZING SOLID, CORROSIVE, N.O.S., 5.1 (8), II
Transport document description (RID)	: UN 3085 OXIDIZING SOLID, CORROSIVE, N.O.S., 5.1 (8), II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 5.1 (8)
Danger labels (ADR)	: 5.1, 8

IMDG

Transport hazard class(es) (IMDG)	: 5.1 (8)
Danger labels (IMDG)	: 5.1, 8

IATA

Transport hazard class(es) (IATA)	: 5.1 (8)
Danger labels (IATA)	: 5.1, 8

ADN

Transport hazard class(es) (ADN)	: 5.1 (8)
Danger labels (ADN)	: 5.1, 8

RID

Transport hazard class(es) (RID)	: 5.1 (8)
Danger labels (RID)	: 5.1, 8

14.4. Packing group

Packing group (ADR)	: II
Packing group (IMDG)	: II
Packing group (IATA)	: II
Packing group (ADN)	: II
Packing group (RID)	: II

14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No
Other information	: No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: OC2

Limited quantities (ADR	: 1kg
Excepted quantities (ADR)	: E2
Packing instructions (ADR)	: P002, IBC06
Mixed packing provisions (ADR)	: MP2
Portable tank and bulk container instructions (ADR)	: T3
Portable tank and bulk container special provisions (ADR)	: TP33
Tank code (ADR)	: SGAN
Vehicle for tank carriage	: AT
Transport category (ADR)	: 2
Special provisions for carriage - Operation (ADR)	: V11
Hazard identification number (Kemler No.)	: 58
Tunnel restriction code (ADR)	: E
EAC code	: 1W
Transport by sea	
Limited quantities (IMDG)	: 1 kg
Excepted quantities (IMDG)	: E2
Packing instructions (IMGD)	: P002
IBC packing instructions (IMDG)	: IBC06
Tank instructions (IMDG)	: T3
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-Q
Stowage category (IMDG)	: B
MFAG-No	: 140
Air transport	
PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y544
PCA limited quantity max net quantity (IATA)	: 2.5kg
PCA packing instructions (IATA)	: 558
PCA max net quantity (IATA)	: 5kg
CAO packing instructions (IATA)	: 562
CAO max net quantity (IATA)	: 25kg
ERG code (IATA)	: 5C
Inland waterway transport	
Classification code (ADN)	: OC2
Limited quantities (ADN	: 1 kg
Excepted quantities (ADN)	: E2

Carriage permitted (ADN)	:
Equipment required (ADN)	: PP, EP
Number of blue cones/lights (ADN)	: 0

Rail transport

Classification code (RID)	: OC2
Limited quantities (RID)	: 1kg
Excepted quantities (RID)	: E2
Packing instructions (RID)	: P002, IBC06
Mixed packing provisions (RID)	: MP2
Portable tank and bulk container instructions (RID)	: T3
Portable tank and bulk container special provisions (RID)	: TP33
Tank codes for RID tanks (RID)	: SGAN
Transport category (RID)	: 2
Colis express (express parcels) (RID)	: CE10
Hazard identification number (RID)	: 58

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

Not applicable

15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1 EU-Regulations

No REACH Annex XVII restrictions

ZIRCONYL NITRATE is not on the REACH Candidate List

ZIRCONYL NITRATE is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV	: Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Denmark

Recommendations Danish Regulation	: Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

16. Other information

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
BLV	Biological limit value
BOD	Biochemical oxygen demand
COD	Chemical oxygen demand
COD	Chemical oxygen demand
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

Safety Data Sheet (SDS), EU This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.