

**RESOLVE 950; RESOLVE 950 PLUS**

Revision Date: 14-Feb-2019  
Former Date: 23-Oct-2018

Revision Number 1.05

**Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1. Product identifier**

**Product Code** CAT00103  
**Product Description:** RESOLVE 950; RESOLVE 950 PLUS  
**Pure substance/mixture** Mixture

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

**Identified uses** Catalyst for oil refining industry.  
**Uses advised against** No information available

**1.3. Details of the supplier of the safety data sheet**

**Company** ALBEMARLE Catalysts Company bv  
Site Amsterdam - Nieuwendammerkade 1-3  
PO Box 37650 - 1030 BE Amsterdam  
The Netherlands  
Tel. : +31.20.634.7000  
Fax.: +31.20.634.7651

For further information, please contact

**'Competent Body for SDS'** Health, Safety & Environment - Louvain-la-Neuve (Belgium)  
ALBEMARLE Europe SPRL

**E-mail address** HSE.LLN@albemarle.com

**1.4. Emergency telephone number**

+32.(0)70.233.201 (CARECHEM 24)

**National Anti-Poison Center** UK: NHS Direct : 111 (National Poisons Information Service)

**Section 2: HAZARDS IDENTIFICATION****2.1. Classification of the substance or mixture**

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

<b>Serious eye damage/eye irritation</b>	Category 1 - (H318)
<b>Chronic aquatic toxicity</b>	Category 2 - (H411)

**2.2. Label elements**

Contains Zinc sulphate

**Signal Word**

Danger

**Hazard Statements**

H318 - Causes serious eye damage  
 H411 - Toxic to aquatic life with long lasting effects

**Precautionary Statements**

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 or doctor/physician  
 P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**2.3. Other hazards**

**Other hazards which do not result in classification** No information available.

**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances**

Not applicable

**3.2 Mixtures**

Component	EC No.	CAS-No	REACH No.	Index No.	Weight %	C&L-CLP
Magnesium oxide	215-171-9	1309-48-4	exemption	-	0-60	-
Aluminium oxide	215-691-6	1344-28-1	01-2119529248-35-xxxx	-	0-60	-
Zinc sulphate	231-793-3	7733-02-0		030-006-00-9	<25	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Mac=1 Aquatic Chronic 1 (H410) Mch=1
Silicon dioxide	231-545-4	7631-86-9	01-2119379499-16-xxxx	-	0-10	-

*Full text of H- and EUH-phrases: see section 16*

**Section 4: FIRST AID MEASURES****4.1. Description of first aid measures****Skin contact**

IF ON SKIN: Wash with plenty of soap and water.

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<b>Eye contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
<b>Inhalation</b>	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
<b>Ingestion</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink.

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

**Symptoms** Causes serious eye damage.

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

**Immediate Medical Assistance Required** No  
Advice to physician : Treat symptomatically.

**Emergency equipment** Ensure that eyewash stations and safety showers are close to the workstation location.

### **Section 5: FIRE FIGHTING MEASURES**

#### **5.1. Extinguishing media**

**Suitable Extinguishing Media** Not combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

#### **5.2. Special hazards arising from the substance or mixture**

**Specific Hazards Arising from the Chemical** Not applicable.

#### **5.3. Advice for firefighters**

**Protective equipment and precautions for firefighters** In the event of fire, wear self contained breathing apparatus

### **Section 6: ACCIDENTAL RELEASE MEASURES**

#### **6.1. Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Avoid dust formation. Ensure adequate ventilation

**For emergency responders** Use personal protection recommended in Section 8.

#### **6.2. Environmental precautions**

**Environmental Precautions** Prevent spilled substance from entering water supplies or water courses. Contain any spill with dikes or absorbents to prevent migration and entry into sewers or streams. May require excavation of contaminated soil. Do not discharge into drains or the environment, dispose to an authorised waste collection point.

#### **6.3. Methods and material for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Clean-up** Take up mechanically and collect in suitable container for disposal. Residue may be

washed down with water.

#### 6.4. Reference to other sections

See section 8 for more information. See section 13 for more information.

### Section 7: HANDLING AND STORAGE

#### 7.1. Precautions for safe handling

**Handling** Use with local exhaust ventilation. Avoid dust formation.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

#### 7.2. Conditions for safe storage, including any incompatibilities

**Storage** No special storage required. To maintain quality: Keep container tightly closed.

#### 7.3. Specific end use(s)

**Specific end use** No information available

### Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control parameters

**Exposure limits** No exposure limits have been established for this material. The following exposure limit(s) apply for :

#### **Magnesium oxide**

<b>Austria TWA</b>	5 mg/m <sup>3</sup> respirable fraction 10 mg/m <sup>3</sup> inhalable fraction 5 mg/m <sup>3</sup> respirable fume
<b>Austria STEL</b>	10 mg/m <sup>3</sup> respirable fraction. 20 mg/m <sup>3</sup> respirable fume. 20 mg/m <sup>3</sup> inhalable fraction.
<b>Belgium TWA</b>	10 mg/m <sup>3</sup> fume.
<b>Bulgaria TWA</b>	10.0 mg/m <sup>3</sup>
<b>Croatia TWA</b>	10 mg/m <sup>3</sup> Total dust. 4 mg/m <sup>3</sup> Respirable dust.
<b>Cyprus TWA</b>	10mg/m <sup>3</sup> fume
<b>Czech Republic TWA</b>	5 mg/m <sup>3</sup>
<b>Czech Republic CEIL</b>	10 mg/m <sup>3</sup>
<b>Denmark TWA</b>	6 mg/m <sup>3</sup> Mg
<b>Estonia TWA</b>	0.5 mg/m <sup>3</sup> Respirable dust Mg. 1 mg/m <sup>3</sup> Total dust Mg.
<b>France VME</b>	10 mg/m <sup>3</sup> Fume.
<b>Germany OEL (TWA)</b>	1.5 mg/m <sup>3</sup> respirable fraction 4 mg/m <sup>3</sup> inhalable fraction
<b>Greece TWA</b>	10 mg/m <sup>3</sup> inhalable fraction 5 mg/m <sup>3</sup> respirable fraction
<b>Hungary TWA</b>	6 mg/m <sup>3</sup> respirable dust, fume
<b>Hungary STEL</b>	24 mg/m <sup>3</sup>
<b>Ireland TWA</b>	4 mg/m <sup>3</sup> respirable dust 5 mg/m <sup>3</sup> fume 10 mg/m <sup>3</sup> total inhalable dust
<b>Ireland STEL</b>	10 mg/m <sup>3</sup> fume 12 mg/m <sup>3</sup> respirable dust 30 mg/m <sup>3</sup> total inhalable dust

Italy TWA	10mg/m <sup>3</sup> inhalable fraction 3mg/m <sup>3</sup> respirable part
Lithuania TWA	4 mg/m <sup>3</sup>
Norway TLV	10 mg/m <sup>3</sup>
Norway STEL	20 mg/m <sup>3</sup>
Poland TWA	10 mg/m <sup>3</sup> inhalable fraction
Portugal TWA	10 mg/m <sup>3</sup> inhalable fraction
Romania TWA	5 mg/m <sup>3</sup> fume
Romania STEL	15 mg/m <sup>3</sup> fume
Slovakia TWA	1.5 mg/m <sup>3</sup> respirable fraction, fume 4 mg/m <sup>3</sup> inhalable fraction, fume
Spain VLA-ED	10 mg/m <sup>3</sup> dust and fume
Switzerland TWA	3 mg/m <sup>3</sup> fume, respirable dust
The United Kingdom TWA	10 mg/m <sup>3</sup> Mg inhalable dust 4 mg/m <sup>3</sup> Mg fume and respirable dust
The United Kingdom STEL	30 mg/m <sup>3</sup> Mg inhalable dust 12 mg/m <sup>3</sup> Mg fume and respirable dust

**Aluminium oxide**

Austria TWA	5 mg/m <sup>3</sup> alveolar dust, respirable fraction, smoke STEL: 10 mg/m <sup>3</sup>
Austria STEL	10 mg/m <sup>3</sup> alveolar dust, respirable fraction, smoke
Belgium TWA	1 mg/m <sup>3</sup>
Bulgaria TWA	1.5MGM3;Respirable fraction. 10.0MGM3;Dust.
Croatia TWA	10 mg/m <sup>3</sup> total dust 4 mg/m <sup>3</sup> respirable dust
Czech Republic TWA	10.0 mg/m <sup>3</sup> dust
Denmark TWA	5 mg/m <sup>3</sup> total 2 mg/m <sup>3</sup> respirable
Estonia TWA	10 mg/m <sup>3</sup> total dust 4 mg/m <sup>3</sup> respirable dust
France VME	10MGM3
Germany OEL (TWA)	4MGM3;Inhalable dust. 1.5MGM3;Respirable dust. TRGS 900 limit : 3mg/m <sup>3</sup> ;Respirable 10mg/m <sup>3</sup> Inhalable.
Greece TWA	10 mg/m <sup>3</sup> inhalable fraction 5 mg/m <sup>3</sup> respirable fraction
Hungary TWA	6 mg/m <sup>3</sup> respirable dust
Ireland TWA	10 mg/m <sup>3</sup> total inhalable dust 4 mg/m <sup>3</sup> respirable dust
Ireland STEL	30 mg/m <sup>3</sup> total inhalable dust 12 mg/m <sup>3</sup> respirable dust
Italy TWA	1MGM3;Respirable.
Latvia TWA	6 mg/m <sup>3</sup> disintegration aerosol
Lithuania TWA	5 mg/m <sup>3</sup> Al inhalable fraction 2 mg/m <sup>3</sup> Al respirable fraction
Norway TLV	10 mg/m <sup>3</sup>
Norway STEL	10 mg/m <sup>3</sup>
Poland TWA	2.5 mg/m <sup>3</sup> inhalable fraction 1.2 mg/m <sup>3</sup> respirable fraction
Portugal TWA	10 mg/m <sup>3</sup> particulate matter containing no Asbestos and <1% Crystalline silica
Romania TWA	2 mg/m <sup>3</sup> aerosol 3 mg/m <sup>3</sup> 1 mg/m <sup>3</sup>
Romania STEL	5 mg/m <sup>3</sup> aerosol 10 mg/m <sup>3</sup> dust 3 mg/m <sup>3</sup> fume

<b>Slovakia TWA</b>	1.5 mg/m <sup>3</sup> fume 1.5 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup> respirable fraction 6 mg/m <sup>3</sup> total aerosol
<b>Spain VLA-ED</b>	10 mg/m <sup>3</sup>
<b>Sweden NGV</b>	5 mg/m <sup>3</sup> total dust 2 mg/m <sup>3</sup> respirable dust
<b>Switzerland TWA</b>	3 mg/m <sup>3</sup> respirable dust, smoke
<b>Switzerland STEL</b>	24 mg/m <sup>3</sup> respirable dust, smoke
<b>The United Kingdom TWA</b>	10 mg/m <sup>3</sup> inhalable dust 4 mg/m <sup>3</sup> respirable dust

**Zinc sulphate**

<b>Germany OEL (TWA)</b>	0.1 mg/m <sup>3</sup> respirable fraction 2 mg/m <sup>3</sup> inhalable fraction
<b>Slovakia TWA</b>	0.1mg/m <sup>3</sup> respirable fraction 2mg/m <sup>3</sup> inhalable fraction

**Silicon dioxide**

<b>Austria TWA</b>	4 mg/m <sup>3</sup> inhalable fraction
<b>Belgium TWA</b>	10mg/m <sup>3</sup>
<b>Bulgaria TWA</b>	4mg/m <sup>3</sup> inhalable fraction
<b>Croatia TWA</b>	2.4mg/m <sup>3</sup> respirable dust 6mg/m <sup>3</sup> total dust
<b>Cyprus TWA</b>	5mg/m <sup>3</sup> (>5µm) 2mg/m <sup>3</sup> (<5µm)
<b>Czech Republic TWA</b>	0.1 mg/m <sup>3</sup> respirable fraction 4.0 mg/m <sup>3</sup>
<b>Estonia TWA</b>	2 mg/m <sup>3</sup> respirable dust
<b>Finland OEL (TWA)</b>	5 mg/m <sup>3</sup>
<b>Germany OEL (TWA)</b>	4 mg/m <sup>3</sup> inhalable fraction 4 mg/m <sup>3</sup>
<b>Ireland TWA</b>	6 mg/m <sup>3</sup> total inhalable dust 2.4 mg/m <sup>3</sup> respirable dust
<b>Ireland STEL</b>	18 mg/m <sup>3</sup> total inhalable dust 7.2 mg/m <sup>3</sup> respirable dust
<b>Latvia TWA</b>	1 mg/m <sup>3</sup>
<b>Norway TLV</b>	1.5 mg/m <sup>3</sup>
<b>Norway STEL</b>	1.5 mg/m <sup>3</sup>
<b>Poland TWA</b>	2mg/m <sup>3</sup> respirable fraction 10mg/m <sup>3</sup> inhalable fraction
<b>Slovakia TWA</b>	4.0 mg/m <sup>3</sup> total aerosol
<b>Slovenia TWA</b>	0.3 mg/m <sup>3</sup> respirable fraction, fume
<b>Switzerland TWA</b>	4 mg/m <sup>3</sup> inhalable dust, also manufactured in wet processing
<b>The United Kingdom TWA</b>	6 mg/m <sup>3</sup> inhalable dust 2.4 mg/m <sup>3</sup> respirable dust
<b>The United Kingdom STEL</b>	18 mg/m <sup>3</sup> inhalable dust 7.2 mg/m <sup>3</sup> respirable dust

**DNEL/DMEL & PNEC Values**

**Derived No Effect Level (DNEL)**

**Aluminium oxide**

Inhalation - Chronic systemic effects, workers	3 mg/m <sup>3</sup>
Oral - Chronic systemic effects, consumers	6.22 mg/kg bw/d

**Silicon dioxide**

Inhalation - Chronic local effects, workers	4 mg/m <sup>3</sup>
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**Predicted No Effect Concentration (PNEC)****Aluminium oxide**

Sewage Treatment Plant	20 mg/l
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**8.2. Exposure controls**

<b>Engineering Controls</b>	Use with local exhaust ventilation.
<b>Personal protective equipment</b>	
<b>Skin Protection</b>	If skin contact or contamination of clothing is likely, protective clothing should be worn.
<b>Eye/face Protection</b>	Chemical goggles or face shield with safety glasses.
<b>Hand protection</b>	For permanent (> 480 minutes), full contact use, 100% nitrile gloves conforming to EN 374. If used under conditions other than given above it is recommended that a supplier of CE approved cat. III gloves is contacted.
<b>Respiratory Protection</b>	If dust occurs: dust mask with particle filter (respirator with filter P3).

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

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

<b>Physical state</b>	Powder.
<b>Odor</b>	Odourless.
<b>Color</b>	Light yellow.
<b>Odor Threshold</b>	None
<b>pH</b>	Not applicable
<b>Melting point/freezing point</b>	Not applicable
<b>Initial boiling point and boiling range</b>	Not applicable
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	Not combustible.
<b>Upper flammability limit:</b>	No data available
<b>Lower flammability limit:</b>	No data available
<b>Vapor Pressure</b>	Not applicable
<b>Vapor Density</b>	Not applicable
<b>Relative density</b>	700 - 900 kg/m <sup>3</sup> (compacted - bulk)
<b>Water Solubility</b>	Practically insoluble.
<b>Partition coefficient</b>	No data available
<b>Autoignition temperature</b>	No data available
<b>Decomposition temperature</b>	No data available
<b>Viscosity, kinematic</b>	Not applicable: Solid
<b>Dynamic viscosity</b>	Not applicable: Solid
<b>Explosive Properties</b>	Not applicable
<b>Oxidizing Properties</b>	Not applicable

**9.2. Other information**

No data available.

## Section 10: STABILITY AND REACTIVITY

**10.1. Reactivity**

<b>Reactivity Hazard</b>	No data available.
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**10.2. Chemical stability**

<b>Stability</b>	Stable under normal conditions.
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**10.3. Possibility of hazardous reactions**

**Possibility of Hazardous Reactions** None under normal processing.

**10.4. Conditions to avoid**

**Conditions to Avoid** None known.

**10.5. Incompatible materials**

**Incompatible Materials** No materials to be especially mentioned.

**10.6. Hazardous decomposition products**

**Hazardous decomposition products** None under normal use conditions.

**Section 11: TOXICOLOGICAL INFORMATION****11.1. Information on toxicological effects**

**Acute toxicity** This product is a mixture. Health hazard information is based on its components. Not expected to be acutely toxic

*ATEmix (oral)* 3,858.00 mg/kg

Aluminium oxide

Rat Oral LD50: > 2000 mg/kg bw

Rat Inhalation LC50: > 2.3 mg/l (4h) (aerosol) ( OECD Test No. 403: Acute Inhalation Toxicity ) Highest achievable concentration.

Zinc sulphate

Rat Oral LD50: 926 mg/kg

Rat Dermal LD50 : > 2000 mg/kg

Silicon dioxide

Rat Oral LD50: > 5000 mg/kg (rat) ( OECD Test No. 401: Acute Oral Toxicity )

Rabbit Dermal LD50: > 5000 mg/kg

Rat Inhalation LC50: > 0.14 mg/l (4h) ( OECD Test No. 403: Acute Inhalation Toxicity )

**Skin Corrosion/Irritation**

Aluminium oxide

Skin irritation : No skin irritation (rabbit).

Zinc sulphate

Skin irritation : OECD Test No. 404: Acute Dermal Irritation/Corrosion (rabbit): No skin irritation.

Silicon dioxide

Skin irritation : No skin irritation (rabbit). Repeated exposure may cause skin dryness or cracking.

**Serious eye damage/eye irritation** Causes serious eye damage

Aluminium oxide

Eye Contact : May cause irritation to the eyes (by mechanical effect).

Zinc sulphate

Eye Contact : OECD Test No. 405: Acute Eye Irritation/Corrosion (rabbit): Risk of serious damage to eyes.

Silicon dioxide

Eye Contact : Slightly irritating but not sufficient for classification. (rabbit)

**Respiratory irritation** No information available



**Sensitization:**

## Aluminium oxide

OECD Test No. 406: Skin Sensitization: Non sensitizing to guinea pigs according to Magnusson & Kligman assay.

## Zinc sulphate

Local lymph node assay : Not sensitizing.

## Silicon dioxide

Not a skin sensitizer.

**Mutagenic Effects**

## Aluminium oxide

Information given is based on data obtained from similar substances. In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.

## Zinc sulphate

Information given is based on data obtained from similar substances. No mutagenicity or genotoxicity was seen in the Ames, in vitro chromosome aberration or in vivo mouse micronucleus tests.

## Silicon dioxide

No mutagenicity or genotoxicity was seen in the Ames, in vitro chromosome aberration or in vivo mouse micronucleus tests. In vivo tests did not show mutagenic effects

**Carcinogenic effects**

## Aluminium oxide

Information given is based on data obtained from similar substances. Did not show carcinogenic effects in animal experiments (weight of evidence approach).

## Zinc sulphate

Did not show carcinogenic effects in animal experiments (mice).

## Silicon dioxide

Did not show carcinogenic effects in animal experiments (weight of evidence approach).

**Reproductive Effects**

## Aluminium oxide

Information given is based on data obtained from similar substances. No indication of effects on fertility. No indication of effects on developmental toxicity. (weight of evidence approach).

## Zinc sulphate

No indication of effects on developmental toxicity.

## Silicon dioxide

No indication of effects on fertility or embryonic development in the absence of severe systemic toxicity.

**STOT - single exposure** No information available.

**STOT - repeated exposure****Chronic Toxicity**

## Aluminium oxide

Repeated dose toxicity Inhalation ( 28 days ) (rat): NOAEL (No observed adverse effect level): 70 mgAl/m<sup>3</sup> .

Target Organs: Lungs. Respiratory system.

Repeated dose toxicity 1-year (rat) oral: NOAEL (No observed adverse effect level): >=30 mgAl/kg bw.

## Zinc sulphate

Repeated dose (90 days) toxicity (oral) (rat): NOAEL (No observed adverse effect level): 104 mgZn/kg bw/day.

## Silicon dioxide

Repeated dose toxicity Inhalation (rat) (90 days) : NOAEC: 1.3 mg/m<sup>3</sup> (dust).

Repeated dose toxicity oral ( Two-year feeding study on rats ): NOEL: > 4000 mg/kg bw/day.

Repeated exposure may cause skin dryness or cracking.

Aspiration hazard Not applicable.

Other Toxicological Information No information available

## Section 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity** No data is available on the product itself. Information given is based on data on the components and the ecotoxicology of similar products. Toxic to aquatic life with long lasting effects.

Aluminium oxide

Aquatic toxicity is unlikely due to low solubility.

Zinc sulphate

Very toxic to aquatic life with long lasting effects.

Silicon dioxide

Aquatic toxicity is unlikely due to low solubility.

### 12.2. Persistence and degradability

#### **Persistence/Degradability**

Magnesium oxide

Inorganic substance.

Aluminium oxide

Inorganic substance.

Zinc sulphate

Inorganic substance.

Silicon dioxide

Inorganic substance.

### 12.3. Bioaccumulative potential

#### **Bioaccumulative Potential**

Magnesium oxide

Not expected to bioaccumulate.

Aluminium oxide

Not expected to bioaccumulate.

Zinc sulphate

Not expected to bioaccumulate.

Silicon dioxide

Not expected to bioaccumulate.

### 12.4. Mobility in soil

#### **Mobility in Environmental Media**

Aluminium oxide

Is not likely mobile in the environment due its low water solubility.

Silicon dioxide

Is not likely mobile in the environment due its low water solubility.

### 12.5. Results of PBT and vPvB assessment

#### **PBT and vPvB assessment**

Magnesium oxide

Not applicable. Inorganic substance.  
 Aluminium oxide  
 Not applicable. Inorganic substance.  
 Zinc sulphate  
 Not applicable. Inorganic substance.  
 Silicon dioxide  
 Not applicable. Inorganic substance.

**12.6. Other adverse effects**

**Other information** No information available

**Section 13: DISPOSAL CONSIDERATIONS**

**13.1. Waste treatment methods**

**Waste disposal methods** Dispose in a safe manner in accordance with local/national regulations. Refer to manufacturer/supplier for information on recovery/recycling.

**Section 14: TRANSPORT INFORMATION**

**REGULATED**

**SEA** yes  
**ROAD/RAIL** yes  
**AIR** yes

**SEA**

**IMO Class** 9  
**Packing Group** III  
**UN-No** 3077  
**IMO Labelling and Marking** 9 + Marine Pollutant Marking  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s. ( Zinc Sulfate )  
**EmS** F-A, S-F  
**Marpol - Annex II** Not determined  
**Marpol - Annex III** Marine pollutant  
**Transport Description** UN 3077 Environmentally hazardous substance, solid, N.O.S. ( Zinc Sulfate ), 9, III, Marine pollutant

**ROAD/RAIL**

**ADR/RID Class** 9  
**Classification Code** M7  
**Packing Group** III  
**UN-No** 3077  
**Hazard Identification No** 90  
**ADR/RID-Labelling/ Marking** 9 + 'Environmentally hazardous substance' mark  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s. ( Zinc Sulfate )  
**Transport Description** UN 3077 Environmentally hazardous substance, solid, N.O.S. ( Zinc Sulfate ), 9, III

**AIR**

**IATA/ICAO Class** 9  
**Packing Group** III  
**UN-No** 3077  
**IATA/ICAO Labelling/Marking** 9 + 'Environmentally hazardous substance' mark  
**Passenger Aircraft** Maximum net quantity per package: 400 kg  
**Cargo aircraft only** Maximum net quantity per package: 400 kg  
**Proper shipping name** Environmentally hazardous substances, solid, n.o.s. ( Zinc Sulfate )  
**Transport Description** UN 3077 Environmentally hazardous substance, solid, N.O.S. ( Zinc Sulfate ), 9, III

**Uncleaned empty packagings/transport equipments****ROAD/RAIL (ADR/RID)**

Uncleaned empty packaging, receptacle, portable tank, tank-container, tank-trailer,.... ; last contained : UN 3077,  
Environmentally hazardous substances, solid, n.o.s. ( Zinc Sulfate ), 9, III

**SEA (IMO/IMDG)**

Uncleaned empty packaging, receptacle, portable tank, tank-container, tank-trailer,.... ; last contained : UN 3077  
Environmentally hazardous substances, solid, n.o.s. ( Zinc Sulfate ), 9, III, Marine pollutant

**Section 15: REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU Labelling****EC Regulation 1272/2008 (CLP)**

SEE SECTION 2.

**National regulations****Germany**

Component	CAS-No	Germany - Water Classification (VwVwS) -	TA Luft (German Air Pollution Control Regulation)
Magnesium oxide	1309-48-4	class 1	-
Aluminium oxide	1344-28-1	nwg	-
Zinc sulphate	7733-02-0	class 3	-
Silicon dioxide	7631-86-9	nwg	-

**European Union:****REACH (According to Regulation (EC) N°1907/2006)**

Considered as a mixture under REACH.

Components have been pre-registered.

Components - Registration number :

**Magnesium oxide**

REACH No. exemption

**Aluminium oxide**

REACH No. 01-2119529248-35-xxxx

**Silicon dioxide**

REACH No. 01-2119379499-16-xxxx

**International Inventories**

International Inventories	TSCA	DSL	NDSL	AICS	EINECS	ENCS	KECL	PICCS	IECSC	NZIoC	TCSI
RESOLVE 950; RESOLVE 950 PLUS	X	X	-	X	X	X	X	X	X	X	X

(X) Complies (-) Does not Comply

## 15.2. Chemical Safety Assessment

**Chemical Safety Assessment** Mixture. No Chemical Safety Assessment has been carried out.

### Section 16: OTHER INFORMATION

#### Full text of H-Statements referred to under section 3

H302 - Harmful if swallowed

H318 - Causes serious eye damage

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

#### Legend

*DN(M)EL : Derived Non(Minimum) Effect Level - PNEC : Predicted No Effect Level*

*SVHC: Substances of Very High Concern for Authorization:*

*TWA (time-weighted average)*

*STEL (Short Term Exposure Limit)*

*ATE : Acute Toxicity Estimate*

*ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road*

*C&L : Classification and Labelling*

*CAS # : CAS (Chemical Abstracts Service) registry number (CASRN; CAS #)*

*CSR : Chemical Safety Report*

*CSA : Chemical Safety Assessment*

*ECHA : European Chemicals Agency*

*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

*EU : European Union*

*EWC : European Waste Catalog*

*GHS : Globally Harmonized System (GHS)*

*IATA : International Air Transport Association (IATA)*

*ICAO : International Civil Aviation Organisation*

*IMDG : International Maritime Dangerous Goods (IMDG)*

*KOW : octanol-water partition coefficient*

*LC50 : median lethal concentration*

*LD50 : median lethal dose*

*MSDS : Material Safety Data Sheet*

*OECD : Organization for Economic Co-operation and Development (OECD)*

*OEL : Occupational Exposure Limits*

*PBT : Persistent, Bioaccumulative, and Toxic (PBT) Chemicals*

*PPE : Personal protection equipment*

*QSAR : Quantitative Structure Activity Relationships [QSAR]*

*REACH : Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) Regulation (EC 1907/2006)*

*RID : Regulation concerning the International Carriage of Dangerous Goods by Rail*

*RMM : Risk management measures [RMM]*

*RCBA : Self-contained breathing apparatus*

*SDS : Safety Data Sheet (SDS)*

*STOT SE : Specific target organ toxicity (STOT) – single exposure*

*STOT RE : Specific target organ toxicity (STOT) – repeated exposure*

*SVHC : Substance(s) of Very High Concern*

*UN : United Nations*

*vPvB : Very Persistent and very Bioaccumulative (vPvB) Chemicals*

**Revision Date:** 14-Feb-2019

**Reason for revision** (M)SDS sections updated - Complete revision of all SDS sections :  
According to Regulation (EC) No. 1907/2006 (REACH - Annex II)  
CLP - EC Regulation N° 1272/2008

See also section 1  
Identification of the substance/preparation and of the company/undertaking

**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

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**End of Safety Data Sheet**