

Material Safety Data Sheet

Date Printed: 5-Mar-09  
 Date Updated: 04 -MAR-08  
 Version 1.2  
 According to 91/155/EEC

## 1 Product and Company Information

Product Number RSK  
 Trade name Refold SK  
 Manufacturer Expedeon Ltd, Unit 1A, Button End, Harston, Cambridgeshire. CB22 7GX  
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## 2 Composition/Information on ingredients

Description

Vials and mixtures containing substances listed below with non-hazardous additions

Substance	CAS #	EC #	Symbol	R- Phrases
Urea	57-13-6	200-315-5		
Dithiothreitol ( <b>DTT</b> )	3483-12-3	222-468-7	Xn	22-36/37/38
Trizma (Tris)	1185-53-1	214-684-5		
Glutathione (Oxidized)	27025-41-8	248-170-7		

## 3 Hazards identification

Special Indiction of Hazards to humans and the environment.

**Urea:** Not hazardous according to Directive 67/548/EEC.

**DTT:** Harmful if swallowed. Irritating to eyes, respiratory system and skin.

**Tris:** Irritating to eyes, respiratory system and skin.

**GSSG:** Irritating to eyes, respiratory system and skin.

## 4 First Aid Measures

After inhalation In case of inhalation, supply fresh air. If breathing becomes difficult consult a physician. If not breathing give artificial respiration.

After skin contact In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

After eye contact Rinse opened eye for at least 15 minutes under running water. Assure adequate flushing by separating eyelids with fingers. Call a physician.

After ingestion If swallowed, wash out mouth with water provided person is conscious. Call physician immediately.

## 5 Fire Fighting Measures

Extinguishing agents	CO <sub>2</sub> , powder or water spray or dry powder or appropriate foam.
Protective equipment	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Special risks	<b>Urea, Tris, DTT:</b> Emits toxic fumes under fire conditions.

## 6 Accidental Release Measures

Procedures for personal precaution	Wear protective equipment. Evacuate area. Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.
Methods for cleaning up	Cover with dry-lime, sand, or soda ash. Sweep up, avoid raising dust and place in covered containers and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

## 7 Handling and Storage

Handling:	Do not breathe dust or vapours. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
Storage	Store at 2-4°C.

## 8 Exposure Controls / Personal protection

Additional information about design of technical facilities	Safety shower and eye bath. Use DTT solutions in a chemical fume hood.
Ingredients with limit values	This product does not contain any relevant quantities of materials with critical values that need to be monitored at the workplace.
Personal protective equipment	The usual precautionary measure are to be adhered to when handling chemicals
Protection of the hands	Protective gloves.
Material of gloves	The selection of suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Eye protection	Wear safety glasses.
Other	Wear protective clothing e.g. laboratory coat Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

## 9 Physical and Chemical Properties

General information:	Urea	Tris	DTT	GSSG
Form	Solid	Liquid	Liquid	Solid
Colour	White	Colourless	Colourless	White
Odour	N/A	N/A	Characteristic	Characteristic
Change in condition:				
Melting point/range	N.D	N.D	N.D	N.D
Boiling point/range	N.D	N.D	N.D	N.D
Autoignition temperature	N/A	N/A	N/A	N/A
Explosion limits	N/A	N/A	N/A	N/A

Explosive properties	N/A	N/A	N/A	N/A
Flammability	N/A	N/A	N/A	N/A
Flash point	N/A	N/A	N/A	N/A
Oxidizing properties	N/A	N/A	N/A	N/A
Partitioning Coefficient	N/A	N/A	N/A	N/A
pH-value at 22 C	N.D	N.D	N.D	N.D
SG / Density	1.335 g/cm <sup>3</sup>	N.D	N.D	N.D
Solubility in/miscibility with water	Soluble	Soluble	Soluble	Soluble
Vapour density	N.D	N.D	N.D	N.D
Vapour pressure	N.D	N.D	N.D	N.D
Viscosity	N.D	N.D	N.D	N.D
	N.D No Data, N/A Not Applicable			

## 10 Stability and Reactivity

Stability	Stable
Thermal decomposition	No decomposition if used according to specifications
Dangerous reactions	Avoid bases, oxidizing agents, reducing agents, alkali metals, acids, acid chlorides, acid anhydrides, ammonia, oxidizing agents, peroxides.
Dangerous decomposition products	Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides. Hydrogen chloride gas.
Hazardous polymerisation	Will not occur

## 11 Toxicological information

### UREA

#### ACUTE TOXICITY

LD50 Oral Rat 8471 mg/kg

LD50 Intraperitoneal Rat >5 GM/KG

LD50 Subcutaneous Rat 8200 MG/KG

Remarks: Behavioral:Change in motor activity (specific assay). Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Antipsychotic.

LD50 Intravenous Rat 5300 MG/KG

Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Change in motor activity (specific assay). Behavioral:Antipsychotic.

LD50 Intratracheal Rat 567 MG/KG

Remarks: Blood:Methemoglobinemia-Carboxyhemoglobin. Lungs, Thorax, or Respiration:Dyspnea. Behavioral:Convulsions or effect on seizure threshold.

LD50 Oral Mouse 11000 mg/kg

LD50 Subcutaneous Mouse 9200 MG/KG

Remarks: Behavioral:Change in motor activity (specific assay). Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Antipsychotic.

LD50 Intravenous Mouse 4600 MG/KG

Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Change in motor activity (specific assay). Behavioral:Antipsychotic.

#### IRRITATION DATA

Eyes Rabbit Remarks: No irritation effect

Skin Rabbit Remarks: No irritation effect

Skin Human 22 mg Remarks: Mild irritation effect

#### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **ROUTE OF EXPOSURE**

Skin Contact: May cause skin irritation. Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation. Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

#### **CHRONIC EXPOSURE - CARCINOGEN**

Rat Route of Application: Oral Exposure Time: 1Y Result: Blood:Lymphomas including Hodgkin's disease. Blood:Tumors. Tumorigenic:Neoplastic by RTECS criteria.

Mouse Route of Application: Oral Exposure Time: 1Y Result: Tumorigenic:Carcinogenic by RTECS criteria. Blood:Tumors. Blood:Lymphomas including Hodgkin's disease.

#### **CHRONIC EXPOSURE - MUTAGEN**

Result: Laboratory experiments have shown mutagenic effects.

Human 600 MMOL/L Cell Type: lymphocyte DNA inhibition

Human 50 MMOL/L Cell Type: leukocyte Cytogenetic analysis

Mouse 628 MMOL/L Cell Type: lymphocyte DNA damage

Mouse 100 GM/KG Oral Cytogenetic analysis

Mouse 265 MMOL/L Cell Type: lymphocyte Mutation in mammalian somatic cells.

Hamster 8 MOL/L Cell Type: fibroblast DNA damage

Hamster 16 GM/L 24H Cell Type: fibroblast Cytogenetic analysis

Hamster 13 GM/L Cell Type: lung Cytogenetic analysis

#### **CHRONIC EXPOSURE - REPRODUCTIVE HAZARD**

Species: Woman Dose: 1400 MG/KG Route of Application: Intraplacental Exposure Time: (16W PREG) Result: Effects on Fertility: Abortion.

Species: Woman Dose: 1600 MG/KG Route of Application: Intraplacental Exposure Time: (16W PREG) Result: Effects on Fertility: Abortion.

Species: Woman Dose: 1600 MG/KG Route of Application: Intraplacental Exposure Time: (16W PREG) Result: Effects on Fertility: Abortion.

Species: Monkey Dose: 6 GM/KG Route of Application: Intrauterine Exposure Time: (18W PREG) Result: Effects on Fertility: Abortion.

#### **TRIS**

##### **SIGNS AND SYMPTOMS OF EXPOSURE**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **ROUTE OF EXPOSURE**

Skin Contact: Causes skin irritation. Skin Absorption: May be harmful if absorbed through the skin. Eye

Contact: Causes eye irritation. Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed.

#### **DTT**

##### **SIGNS AND SYMPTOMS OF EXPOSURE**

Exposure can cause: CNS depression. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation. Skin Absorption: May be harmful if absorbed through the skin. Eye Contact: Causes eye irritation. Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract. Ingestion: Harmful if swallowed.

## TARGET ORGAN INFORMATION

Central nervous system.

## GSSG

RTECS NUMBER: MC0556500

## ACUTE TOXICITY

LD50 Oral Rat > 5000 mg/kg

LD50 Subcutaneous Rat >2 GM/KG

LD50 Intravenous Rat >2 GM/KG

LD50 Oral Mouse > 5000 mg/kg

LD50 Subcutaneous Mouse >2 GM/KG

LD50 Intravenous Mouse >2 GM/KG

## SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation. Skin Absorption: May be harmful if absorbed through the skin. Eye Contact: May cause eye irritation. Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled. Ingestion: May be harmful if swallowed.

## 12 Ecological information

Not available

## 13 Disposal considerations

Recommendation for product	Must not be disposed together with household garbage. Do not allow the product to reach the sewage system. Observe all federal, state, and local environmental regulations.
Recommendation for packaging	Dispose according to official regulations.
Recommended cleaning agent	Water, if necessary with cleansing agents

## 14 Transport information

Land transport	
RID/ADR class	Non-hazardous for road transport
Maritime transport	
IMDG class	Non-hazardous for sea transport
Maritime pollutant	
Air transport	
ICAO/IATA class	Non-hazardous for air transport

## 15 Regulatory information

### UREA

Not hazardous according to Directive 67/548/EEC.

#### COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

ID-Number: 118

KBwS-Decision

#### **TRIS**

#### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: Xi Irritant.

R-PHRASES: 36/37/38 Irritating to eyes, respiratory system and skin.

S-PHRASES: 26-36 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

#### COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

ID-Number: 2353

Classification according to appendix 3.

#### **DTT**

#### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: Xn Harmful.

R-PHRASES: 22-36/37/38 Harmful if swallowed. Irritating to eyes, respiratory system and skin.

S-PHRASES: 26-36 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

#### COUNTRY SPECIFIC INFORMATION

Germany

WGK: 3

Self-Classification

#### **GSSG**

Not hazardous according to Directive 67/548/EEC.

#### COUNTRY SPECIFIC INFORMATION

Germany

WGK: 2

Self-Classification

## **16 Other information**

#### Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Expedeon Ltd shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or delivery note for additional terms and conditions of sale.

#### Disclaimer

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