

# Safety Data Sheet

acc. to OSHA HCS

Printing date 08/09/2018

Reviewed on 08/09/2018

## 1 Identification

- **Product identifier**
- **Trade name:** SolvonK4
- **Article number:** 2004
- **CAS Number:**  
2568-90-3
- **EC number:**  
219-909-0
- **Application of the substance / the mixture**  
Halogen-free solvent for dry cleaning in SYSTEMK4 (patent pending)
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
- **Manufacturer:**  
Chemische Fabrik Kreussler & Co. GmbH  
Postfach 120454  
D-65082 Wiesbaden
- **Supplier:**  
Kreussler Inc., 6103 Johns Road Suit 7, Tampa, FL 33634,  
Phone 813-884-1499, Fax 813-884-1599,  
Internet: www.kreussler.com, e-mail: office-tampa@kreussler.com
- **Information department:**  
Abteilung TQM  
Herr Heiko Schmidt  
+49 (0) 611 9271-0  
msds-tc@kreussler.com
- **Emergency telephone number:** +49 (0) 611 9271-0

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Flam. Liq. 4 H227 Combustible liquid.
- **Label elements**
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** Void
- **Signal word** Warning
- **Hazard statements**  
Combustible liquid.
- **Precautionary statements**  
Keep away from flames and hot surfaces. – No smoking.  
Wear protective gloves / eye protection / face protection.  
In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.  
Store in a well-ventilated place. Keep cool.  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 2  
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 1  
Fire = 2  
Reactivity = 0

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- **Other hazards**

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**

- **CAS No. Description**

2568-90-3 1,1'-[methylenebis(oxy)]dibutane

- **Identification number(s)**

· **EC number:** 219-909-0

· **Description:** Halogen-free solvent for dry cleaning in SYSTEMK4 (patent pending)

### 4 First-aid measures

- **Description of first aid measures**

- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Rinse with warm water.  
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Rinse out mouth and then drink plenty of water.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

Carbon monoxide (CO)

- **Advice for firefighters**

· **Protective equipment:** Use normal protective clothing.

- **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

- **Environmental precautions:** No special measures required.

- **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

- **Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## · Protective Action Criteria for Chemicals

|                          |
|--------------------------|
| · <b>PAC-1:</b>          |
| Substance is not listed. |
| · <b>PAC-2:</b>          |
| Substance is not listed. |
| · <b>PAC-3:</b>          |
| Substance is not listed. |

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store in dry conditions.
- **Specific end use(s)** No further relevant information available.

## \* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Do not eat or drink while working.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**  
PVC or PE gloves  
Recommended thickness of the material:  $\geq 0.4$  mm  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**  
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Not suitable are gloves made of the following materials:**  
Leather gloves  
Strong gloves
- **Eye protection:** Goggles recommended during refilling.

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- **Body protection:** Solvent resistant protective clothing

## \* 9 Physical and chemical properties

|  |  |
|--|--|
| · <b>Information on basic physical and chemical properties</b>   |  |
| · <b>General Information</b>                                     |  |
| · <b>Appearance:</b>   |  |
| Form:  | Fluid  |
| Color:   | Colorless  |
| · <b>Odor:</b>   | Characteristic                                       |
| · <b>Odor threshold:</b>   | Not determined.                                      |
| · <b>pH-value:</b>   | Slightly alkaline                                    |
| · <b>Change in condition</b>                                     |  |
| Melting point/Melting range:                                     | -59.4 °C (-74.9 °F)                                  |
| Boiling point/Boiling range:                                     | 182.5 °C (360.5 °F)                                  |
| · <b>Flash point:</b>  | 62 °C (143.6 °F) (ASTMD93 (PMCC))                    |
| · <b>Flammability (solid, gaseous):</b>                          | Not applicable.                                      |
| · <b>Ignition temperature:</b>                                   | 220 °C (428 °F)                                      |
| · <b>Decomposition temperature:</b>                              | Not determined.                                      |
| · <b>Auto igniting:</b>  | 220 °C (ASTME659)                                    |
| · <b>Danger of explosion:</b>                                    | Product does not present an explosion hazard.        |
| · <b>Explosion limits:</b>                                       |  |
| Lower:   | 0.63 Vol %   |
| Upper:   | 23.6 Vol %   |
| · <b>Vapor pressure at 20 °C (68 °F):</b>                        | 0.79 hPa (0.6 mm Hg)                                 |
| · <b>Density at 20 °C (68 °F):</b>                               | 0.84 g/cm <sup>3</sup> (7.01 lbs/gal)                |
| · <b>Relative density</b>  | Not determined.                                      |
| · <b>Vapor density</b>   | Not determined.                                      |
| · <b>Evaporation rate</b>  | 5.54 (Butylacetat = 1)                               |
| · <b>Solubility in / Miscibility with</b>                        |  |
| Water at 20 °C (68 °F):  | 0.003 g/l (DIN EN ISO 9377)<br>222.5 mg/l (OECD 105) |
| · <b>Partition coefficient (n-octanol/water):</b> Log Kow = 2.75 |  |
| · <b>Viscosity:</b>  |  |
| Dynamic:   | Not determined.                                      |
| Kinematic at 20 °C (68 °F):                                      | 1.18 mm <sup>2</sup> /s                              |
| Organic solvents:  | 100.0 %  |
| VOC (US)   | 100.0 %  |
| · <b>Other information</b>                                       | No further relevant information available.           |
| · <b>Additional information</b>                                  | M=160.26 g/mol                                       |

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Reacts with strong acids and oxidizing agents.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.

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- **Hazardous decomposition products:**

Aldehyde  
Carbon monoxide

## \* 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

**ATE (Acute Toxicity Estimate)**

|        |       |                    |
|--------|-------|--------------------|
| Dermal | LD-50 | >2,000 mg/kg (rat) |
|--------|-------|--------------------|

**2568-90-3 1,1'-[methylenebis(oxy)]dibutane**

|      |       |                                 |
|------|-------|---------------------------------|
| Oral | LD-50 | 6,873 mg/kg (rat) (OECD TG 401) |
|------|-------|---------------------------------|

|        |       |                    |
|--------|-------|--------------------|
| Dermal | LD-50 | >2,000 mg/kg (rat) |
|--------|-------|--------------------|

|            |             |                            |
|------------|-------------|----------------------------|
| Inhalative | NOAEL (90d) | 3.12789 mg/l/6 h/day (rat) |
|------------|-------------|----------------------------|

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

Substance is not listed.

- **NTP (National Toxicology Program)**

Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** 40-50% biodegradable, 34 d

- **Behavior in environmental systems:**

- **Bioaccumulative potential**

bioconcentration factor (BCF) = 30,38

Log Kow 2,75

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

The product may not be released into the environment without control.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

## \* 13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:** Dispose of in accordance with local, state, and federal Regulations.

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

|   |  |
|---|--|
| · UN-Number   |  |
| · DOT, ADR, ADN, IMDG, IATA   | Void   |
| · UN proper shipping name   |  |
| · DOT, ADR, ADN, IMDG, IATA   | Void   |
| · Transport hazard class(es)  |  |
| · DOT   | Class combustible liquid, Packing group III for quantities of 450 liters (119 gallons) or more; not regulated for smaller quantities |
|   | Possible Shipping Description(s):  |
|   | Combustible liquid, n.o.s. (Dibutoxymethane)   |
|   | CBL NA 1993 III  |
| · Class   | Void   |
| · ADR, ADN, IMDG, IATA  |  |
| · Class   | Void   |
| · Packing group   |  |
| · DOT, ADR, IMDG, IATA  | Void   |
| · Environmental hazards:  |  |
| · Marine pollutant:   | No   |
| · Special precautions for user  | Not applicable.  |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable.  |
| · UN "Model Regulation":  | Void   |

### \*15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

|   |                          |
|---|--------------------------|
| · Section 355 (extremely hazardous substances):               | Substance is not listed. |
| · Section 313 (Specific toxic chemical listings):             | Substance is not listed. |
| · TSCA (Toxic Substances Control Act):                        | Substance is listed.     |
| · Proposition 65  |                          |
| · Chemicals known to cause cancer:                            | Substance is not listed. |
| · Chemicals known to cause reproductive toxicity for females: | Substance is not listed. |
| · Chemicals known to cause reproductive toxicity for males:   | Substance is not listed. |
| · Chemicals known to cause developmental toxicity:            | Substance is not listed. |

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| · <b>New Jersey Right-to-Know List:</b>   |            |            |    |     |
|---|------------|------------|----|-----|
| Substance is not listed.  |            |            |    |     |
| · <b>Pennsylvania Right-to-Know List:</b>   |            |            |    |     |
| Substance is not listed.  |            |            |    |     |
| · <b>Carcinogenicity categories</b>   |            |            |    |     |
| · <b>EPA (Environmental Protection Agency)</b>  |            |            |    |     |
| Substance is not listed.  |            |            |    |     |
| · <b>TLV (Threshold Limit Value established by ACGIH)</b>   |            |            |    |     |
| Substance is not listed.  |            |            |    |     |
| · <b>MAK (German Maximum Workplace Concentration)</b>   |            |            |    |     |
| Substance is not listed.  |            |            |    |     |
| · <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>   |            |            |    |     |
| Substance is not listed.  |            |            |    |     |
| · <b>Canadian Substances Listings:</b>  |            |            |    |     |
| · <b>Canadian Domestic Substances List (DSL):</b>   |            |            |    |     |
| Substance is listed.  |            |            |    |     |
| · <b>Canadian Ingredient disclosure list (limit 0.1%)</b>   |            |            |    |     |
| Substance is listed.  |            |            |    |     |
| · <b>Canadian Ingredient disclosure list (limit 1%)</b>   |            |            |    |     |
| Substance is not listed.  |            |            |    |     |
| · <b>GHS label elements</b>   |            |            |    |     |
| The substance is classified and labeled according to the Globally Harmonized System (GHS).  |            |            |    |     |
| · <b>Hazard pictograms</b> Void   |            |            |    |     |
| · <b>Signal word</b> Warning  |            |            |    |     |
| · <b>Hazard statements</b>  |            |            |    |     |
| Combustible liquid.   |            |            |    |     |
| · <b>Precautionary statements</b>   |            |            |    |     |
| Keep away from flames and hot surfaces. – No smoking.   |            |            |    |     |
| Wear protective gloves / eye protection / face protection.  |            |            |    |     |
| In case of fire: Use for extinction: CO <sub>2</sub> , powder or water spray.   |            |            |    |     |
| Store in a well-ventilated place. Keep cool.  |            |            |    |     |
| Dispose of contents/container in accordance with local/regional/national/international regulations.   |            |            |    |     |
| · <b>National regulations:</b>  |            |            |    |     |
| · <b>Technical instructions (air):</b>  |            |            |    |     |
| <table border="1"> <thead> <tr> <th>Class</th> <th>Share in %</th> </tr> </thead> <tbody> <tr> <td>NK</td> <td>≥50</td> </tr> </tbody> </table> | Class      | Share in % | NK | ≥50 |
| Class   | Share in % |            |    |     |
| NK  | ≥50        |            |    |     |
| · <b>Chemical safety assessment:</b> A Chemical Safety Assessment has been carried out.   |            |            |    |     |

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

The information of Items 4 through 8 and 10 through 12 partially refers not to the use and the proper application of the product (see Directions for Use/Product Information) but to the release of larger quantities in the case of accidents and irregularities.

The information exclusively describes the safety requirements of the product(s) and is based on the present state of our experience.

Non-ionic tensides can have varying characteristics and classifications despite same CAS-No.

· **Department issuing SDS:**

Department TQM  
Herr Heiko Schmidt  
+49 (0) 611/9271-644

· **Contact:** Herr Heiko Schmidt

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- **Date of preparation / last revision** 08/09/2018 / 9

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Liq. 4: Flammable liquids – Category 4

- **\* Data compared to the previous version altered.**

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