


<b>Safety Data Sheet</b> according to directive 91/155/EEC	Creation date: 12.12.2006 Reviewed on: 18.01.2007 Printing date: 13.02.2007	
	Art.-No.: 02.5120	<b>Bending Spray</b>

## 1. Identification of the substance / preparation and of the company

**Trade name:** Bending Spray 150 ml  
**Company:** ROTHENBERGER Werkzeuge GmbH  
 Industriestr. 7  
 65779 Kelkheim  
 Phone: + 49 (0) 6195 – 800 1

## 2. Composition / information on ingredients

**Chemical characterization:** Formulation of ingredients as indicated with non-hazardous additions. Preparation based on a mineral oil – fatty acid combination with liquefied propellant.

### Hazardous ingredients:

Description	CAS No.	EINECS No.	Symbols	R phrases	Conc.
Isobutane	75-28-5	200-857-2	F+	R12	25 – 50 %
Propane	74-98-6	Propane	F+	R12	2,5 – 10 %

**Additional information:** For wording of the mentioned Risk Phrases please see chapter 16.

## 3. Hazards identification

**Hazard designation:** F+ Extremely flammable

### Instructions on particular hazards to man and environment:

R12 Extremely flammable.  
 R18 In use, may form flammable/explosive vapour-air mixture.

Pressurised container. Protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use. Do not spray on naked flame or any incandescent body. Keep away from sources of ignition – do not smoke. Keep out of reach of children. Without adequate ventilation formation of flammable/explosive vapour-air mixtures may be possible.

### Classification System:


The classification is conform to the current EC lists. In addition it is supplemented by data taken from technical literature and by company data.

## 4. First-aid measures

**General instructions:** Take relevant person outside. Remove contaminated clothes. Does not constitute a hazard of ingestion if used in accordance with instructions.

**After inhalation:** Supply fresh air. Consult a doctor in case of symptoms.

**After skin contact:** Wash skin thoroughly with soap and water or use a proper skin cleaner and rinse afterwards.

<b>Safety Data Sheet</b> according to directive 91/155/EEC	Creation date: 12.12.2006 Reviewed on: 18.01.2007 Printing date: 13.02.2007	
	Art.-No.: 02.5120	<b>Bending Spray</b>

#### 4. First-aid measures (continuance)

<b>After ingestion:</b>	Do not induce vomiting. Supply fresh air. Consult medical advice immediately.
<b>After eye contact:</b>	Rinse immediately opened eye thoroughly under plenty of running water for several minutes. Protect uninjured eye, remove contact lenses. Call your doctor if symptoms persist.
<b>Advice for the physician:</b>	Not applicable.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media:</b>	CO2 extinguishing powder, sand or water spray/mist. Fight against larger fires with water jet or alcohol resistant foam.
<b>Unsuitable extinguishing media:</b>	Water jet.
<b>Specific hazards caused by the substance, its combustion products or resulting gases:</b>	In case of thermal decomposition formation of carbon monoxide, carbon dioxide may be possible. Formation of flammable/explosive vapour-air mixtures may be possible.
<b>Protective equipment for fire fighting:</b>	Protective clothing. Do not inhale explosion gases or combustion gases. Use breathing apparatus.
<b>Additional information:</b>	Cool endangered container with water spray jet. Danger of bursting. Contaminated fire fighting media must not attain drains or waterways.


#### 6. Accidental release measures

<b>Personal safety precautions:</b>	Ensure adequate ventilation. Do not breathe vapour or gas. Avoid contact with eyes skin and clothing. Keep ignition sources away. Do not smoke. Formation of flammable/explosive vapour-air mixtures may be possible. For guidance on protection equipment see chapter 13.
<b>Environmental protection precautions:</b>	Do not allow to enter drains or waterways.
<b>Procedures for cleaning up and collecting:</b>	Ensure adequate ventilation. Absorb or collect liquid with sand, earth or spill control material. For disposal of contaminated absorbent material and otherwise collected product residues see chapter 13.
<b>Additional advice:</b>	See chapter 7 for information on handling instructions.

#### 7. Handling and storage

##### Handling

<b>Instructions for safe handling:</b>	Ensure good ventilation. Avoid prolonged or repeated contact with skin, eyes and clothing. Do not breathe vapour, aerosol or mist.
--	--

<b>Safety Data Sheet</b> according to directive 91/155/EEC	Creation date: 12.12.2006 Reviewed on: 18.01.2007 Printing date: 13.02.2007	
	Art.-No.: 02.5120	<b>Bending Spray</b>

## 7. Handling and storage (continhuance)

### Instructions for fire/explosion protection:

Pressurised container. Protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use. Do not spray on naked flame or any incandescent body. Keep away from sources of ignition – do not smoke. Keep out of reach of children. Without adequate ventilation formation of flammable/explosive vapour-air mixtures may be possible.

### Storage

#### Requirements for storage rooms and containers:

Keep in a well ventilated, cool place. Observe official regulations on storage of aerosols.

#### Additional information regarding storage conditions:

Protect from heat and direct sunlight.

## 8. Exposure controls / personal protection

### Additional information on design of technical facilities:

Not applicable. No further data see chapter 7.

### Components with threshold values that require monitoring at the workplace:

CAS No.	Component name	Type	Value and unit
75-28-5	Iso-butane	MAK (DFG)	2400 mg/m <sup>3</sup> , 1000 ml/m <sup>3</sup>
74-98-6	Propane	MAK (DFG)	1800 mg/m <sup>3</sup> , 1000 ml/m <sup>3</sup>

### Additional information:

The given data are based on the effectual lists.

### Personal protective equipment

#### General protective/hygiene measures:

The general precautions taken when dealing with chemical products should be observed. Do not eat, drink or smoke during working hours. Wash hand before breaks and after work. Keep away from food, beverages and animal feed stokes. Avoid contact with eyes, skin and clothes. Do not breathe vapour, aerosol or mist. Remove contaminated clothes.

#### Respiratory protection:

Not necessary if ventilation is sufficient.

#### Hand protection:


In case of prolonged or repeated contact with skin use gloves or occupational skin care products. Suitable glove material: PVC.

#### Diffusion time of glove material:

Suitability and durability of gloves is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness and dexterity. Always seek advice from glove suppliers.

#### Eye protection:

Safety goggles are recommended.

<b>Safety Data Sheet</b> according to directive 91/155/EEC	Creation date: 12.12.2006 Reviewed on: 18.01.2007 Printing date: 13.02.2007	
	Art.-No.: 02.5120	<b>Bending Spray</b>

## 9. Physical and chemical properties


<b>Physical state:</b>	Aerosol with liquefied gas.
<b>Colour:</b>	Light brown.
<b>Odour:</b>	Characteristic.
<b>Melting point/range:</b>	Not applicable as aerosol.
<b>Boiling point/range:</b>	Not applicable as aerosol.
<b>Flash point:</b>	< 21 °C
<b>Ignition temperature:</b>	Not determined.
<b>Auto-ignition temperature:</b>	This product is not self-igniting.
<b>Explosion risk:</b>	Product is not explosive. However formation of explosive air-steam mixtures may occur.
<b>Explosion limits in air:</b>	of the propellant
<b>Upper:</b>	1,4 % (v)
<b>Lower:</b>	9,5 % (v)
<b>Vapour pressure:</b>	300 kPa (20 °C)
<b>Density (20 °C):</b>	0,73 g/cm <sup>3</sup>
<b>Solubility in water:</b>	Insolubility respectively low solubility.

## 10. Stability and reactivity

<b>Thermal decomposition/conditions to avoid:</b>	Stable if used under appropriate use conditions.
<b>Materials to avoid:</b>	None are known.
<b>Dangerous reactions:</b>	Increasing internal pressure due to warming up. Danger of bursting by overheating. Spraying against flames or incandescent objects may cause hazardous decomposition products. Formation of flammable/explosive vapour-air mixtures may be possible.
<b>Hazardous decomposition products:</b>	In case of thermal decomposition formation of carbon monoxide, carbon dioxide.

## 11. Toxicological information

<b>Basis for assessment:</b>	Information given are based on data of the components and the toxicology of similar products.
<b>Acute toxicity:</b>	Propane/Butane mixture: Inhalation: LC50/4h > 20 mg/l (rat)
<b>Primary irritations</b>	
- to the skin:	No skin irritation.
- to the eyes:	In case of direct contact with eyes, it can cause minor irritation.
- after inhalation:	May cause weak irritations of the respiratory system.
<b>Sensitisation:</b>	Not expected to be a sensitizer.
<b>Additional toxicologically information:</b>	Does not constitute a hazard of ingestion if used in accordance with instructions. Danger of aspiration into lungs by ingestion and following vomiting.

<b>Safety Data Sheet</b> according to directive 91/155/EEC	Creation date: 12.12.2006 Reviewed on: 18.01.2007 Printing date: 13.02.2007	
	Art.-No.: 02.5120	<b>Bending Spray</b>

## 12. Ecological information

<b>Mobility/Behaviour in environmental compartments:</b>	Product is insoluble respectively low soluble in water.
<b>Persistence, degradability:</b>	Propane/Butane in air is oxidised by photochemical reaction (short half-life period) and therefore not persistent in the atmosphere.
<b>Bioaccumulation:</b>	No data available.
<b>Acute ecological toxicity:</b>	No data available.
<b>General information:</b>	Water hazard class 1: slightly hazardous to water /self classification). Undiluted product or large quantities of the product should not be allowed to enter drains or waterways.

## 13. Disposal considerations


<b>Product (recommendation):</b>	Must not disposed off together with domestic waste. Do not allow to enter drains or waterways. Disposal by hazardous waste treatment in accordance with the corresponding regulations.
<b><u>European Waste Catalogue</u></b> <b>Waste code:</b>	16 05            Chemicals and gases in containers. 16 05 04       Gases in pressurized containers containing dangerous substances.
<b>Contaminated packaging: (recommendation)</b>	Disposal in accordance to official regulations.

## 14. Transport information

<b>ADR/RID and GGVSE:</b>	UN 1950 Aerosols Class 2 ADR, limited quantities
<b>Other information:</b>	None.

## 15. Regulatory information

<b>Designation according to EU guidelines:</b>	The classification and designation of the product is in accordance with EC directives / the relevant national regulations.
<b>Classification and hazard designation of product:</b>	Not applicable.
<b>Risk phrases:</b>	R12 – Extremely flammable. R18 – In use, may form flammable/explosive vapour-air mixture.

<b>Safety Data Sheet</b> according to directive 91/155/EEC	Creation date: 12.12.2006 Reviewed on: 18.01.2007 Printing date: 13.02.2007	
	Art.-No.: 02.5120	<b>Bending Spray</b>

## 15. Regulatory information (continhuance)

### Safety phrases:

- S2 Keep out of reach of children.
- S16 Keep away of sources of ignition – no smoking.
- S23 Do not breathe spray.
- S51 Use only in well-ventilated areas.
- S60 This material and its container must be disposed of as hazardous waste.

### Specific designation of definite preparations:

Designation as aerosol according to GefStoffV (D) and Directive 75/324/EWG: Pressurized container. Protect from sunlight and do not expose to temperature exceeding 50 °C. Do not pierce or burn, even after use. Do not spray on naked flame or any incandescent body. Keep away from sources of ignition – do not smoke. Keep out of reach of children. Without adequate ventilation formation of flammable/explosive vapour-air mixtures may be possible.

### Water hazard classification:

WGK 1: slightly hazardous to water (self classification).

## 16. Other information

The information contained in this Material Safety Data Sheet are based on our current knowledge of the product and do not represent a guarantee for product characteristics and do not provide the legal basis for a contractual relationship. Please consult the Data Sheet prior to any use and processing.

### EC Risk phrases as mentioned in chapter 2 and 3:

- R12 - Extremely flammable
- R18 - In use, may form flammable/explosive vapour-air mixture.