

**Safety Data Sheet**  
according to 1907/2006/EC, Article 31

Printing date 06.02.2009

Revision: 06.02.2009

**1 Identification of substance:****· Product details:****· Trade name: Markerspray Eco**  
**Fluorescent marking paint****· Article number:**

0000 881 1787, 0000 881 1789, 0000 881 1790, 0000 881 1791, 0000 881 1792, 0000 881 1793

**· Application of the substance / the preparation** Marker Spray (Aerosol)**· Manufacturer/Supplier:**ANDREAS STIHL AG & Co.KG  
Badstr. 115  
D-71336 Waiblingen  
Tel: +49(0)7151-26-3237  
Fax: +49(0)7151-26-8-3237**Distributed by:**STIHL Incorporated  
536 Viking Drive  
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(757) 486-9100**· Informing department:**Produktmanagement Forsttechnik  
Tel: +49(0)7151-26-3237  
Fax: +49(0)7151-26-83237**· Emergency information:**Tel: +49-621-60-43333  
Fax: +49-621-60-92664**2 Hazards identification****· Hazard designation:**

F+ Extremely flammable

**· Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Warning! Pressurized container.

R 12 Extremely flammable.

Pressurized 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 a naked flame or any incandescent material. Keep away from sources of ignition - No smoking.

**· Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

GB

(Contd. on page 2)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 06.02.2009

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**Trade name: Markerspray Eco**  
**Fluorescent marking paint**

(Contd. from page 1)

### 3 Composition/information on ingredients

- **Chemical characterization**
- **Description:** Mix of the substances listed below including additives not requiring identification.

- **Dangerous components:**

CAS: 106-97-8 EINECS: 203-448-7	butane, pure	 F+; R 12	25-50%
CAS: 64-17-5 EINECS: 200-578-6	ethanol	 F; R 11	10-25%
CAS: 74-98-6 EINECS: 200-827-9	propane liquefied	 F+; R 12	10-25%
CAS: 67-64-1 EINECS: 200-662-2	acetone	 Xi,  F; R 11-36-66-67	< 2.5%

- **Additional information** For the wording of the listed risk phrases refer to section 16.

### 4 First aid measures

- **General information** Take affected persons into the open air.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact**  
Instantly wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult doctor.
- **After swallowing** Drink copious amounts of water and provide fresh air. Instantly call for doctor.

### 5 Fire fighting measures

- **Suitable extinguishing agents**  
Extinguishing powder, foam or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
- **Protective equipment:**  
Wear self-contained breathing apparatus.  
Do not inhale explosion gases or combustion gases.
- **Additional information** Cool endangered containers with water spray jet.

### 6 Accidental release measures

- **Person-related safety precautions:**  
Keep away from ignition sources  
Ensure adequate ventilation  
Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**  
Do not allow product to reach sewage system or water bodies.  
Inform respective authorities in case product reaches water or sewage system.  
Do not allow to enter drainage system, surface or ground water.
- **Measures for cleaning/collecting:**  
Dispose of the material collected according to regulations.  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **Additional information:** See Section 13 for information on disposal.

GB

(Contd. on page 3)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

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Revision: 06.02.2009

**Trade name: Markerspray Eco**  
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(Contd. from page 2)

### 7 Handling and storage

- **Handling**
- **Information for safe handling:**  
 Keep away from heat and direct sunlight.  
 Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
- **Information about protection against explosions and fires:**  
 Highly volatile, flammable constituents are released during processing.  
 Keep ignition sources away - Do not smoke.
- **Storage**
- **Requirements to be met by storerooms and containers:**  
 Store only undamaged original packaging drums.  
 Store containers in a well aired place at a temperature of less than 50 °C.  
 Observe official regulations on storing packagings with pressurized containers.  
 Observe special regulations specified in item 15.
- **Information about storage in one common storage facility:**  
 Take also into account special standards when storing the containers together with inflammable liquids.  
 Store away from flammable substances.
- **Further information about storage conditions:**  
 Keep container tightly sealed.  
 Store in cool, dry conditions in well sealed containers.  
 Protect from heat and direct sunlight.

### 8 Exposure controls and personal protection

- **Components with limit values that require monitoring at the workplace:**

#### 106-97-8 butane, pure

WEL	Short-term value: 1810 mg/m <sup>3</sup> , 750 ppm Long-term value: 1450 mg/m <sup>3</sup> , 600 ppm Carc (if more than 0.1% of buta-1.3-diene)
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#### 64-17-5 ethanol

WEL	Long-term value: 1920 mg/m <sup>3</sup> , 1000 ppm
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#### 67-64-1 acetone

WEL	Short-term value: 3620 mg/m <sup>3</sup> , 1500 ppm Long-term value: 1210 mg/m <sup>3</sup> , 500 ppm
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- **Additional information:** The lists that were valid during the compilation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**  
 Do not eat, drink or smoke while working.  
 Wash hands during breaks and at the end of the work.  
 Keep away from foodstuffs, beverages and food.  
 Avoid contact with the eyes and skin.
- **Breathing equipment:**  
 In case of insufficient removal by suction or longer inhalation a breathing protection is 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

(Contd. on page 4)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 06.02.2009

Revision: 06.02.2009

**Trade name: Markerspray Eco**  
**Fluorescent marking paint**

(Contd. from page 3)

· **Material of gloves**

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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

· **Eye protection:** Safety glasses

· **Body protection:** Protective work clothing.

### 9 Physical and chemical properties:

· **General Information**

<b>Form:</b>	Aerosol
<b>Colour:</b>	According to product specification
<b>Odour:</b>	Characteristic

· **Change in condition**

**Melting point/Melting range:** Not determined

**Boiling point/Boiling range:** -44 °C

· **Flash point:** -97 °C

· **Ignition temperature:** 250 °C

· **Self-inflammability:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/steam mixtures is possible.

· **Critical values for explosion:**

**Lower:** 1.5 Vol %

**Upper:** 15.0 Vol %

· **Vapour pressure at 20 °C:** 8300 hPa

· **Density at 20 °C** 0.71 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

**Water:** Not miscible or difficult to mix

· **Solvent content:**

**Organic solvents:** 79.7 %

**VOC EU** 565.8 g/l

**VOC EU** 79.69 %

**Water:** 0.0 %

· **Solids content:** 10.2 %

### 10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **Dangerous reactions** No dangerous reactions known

(Contd. on page 5)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

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**Trade name: Markerspray Eco**  
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(Contd. from page 4)

· **Dangerous products of decomposition:** No dangerous decomposition products known

### 11 Toxicological information

· **Acute toxicity:**

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

#### 64-17-5 ethanol

Oral	LD50	7060 mg/kg (rat)
Inhalative	LC50	20000 mg/l/4h (rat)

#### 67-64-1 acetone

Oral	LD50	5800 mg/kg (rat)
Dermal	LD50	20000 mg/kg (rabbit)

· **Primary irritant effect:**

· **on the skin:** More frequent and continuous contact with the skin may result in irritation of the skin.

· **on the eye:** No irritant effect.

· **Sensitization:** No sensitizing effect known.

· **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version.

### 12 Ecological information:

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.  
 Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

### 13 Disposal considerations

· **Product:**

· **Recommendation**

The product is suitable for processing by an approved recycling facility or can be disposed of at any government approved waste disposal facility.

The waste code numbers mentioned are recommendations based on the probable use of the product.

· **European waste catalogue**

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 11	waste paint and varnish containing organic solvents or other dangerous substances
15 00 00	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01 00	packaging (including separately collected municipal packaging waste)
15 01 10	packaging containing residues of or contaminated by dangerous substances

(Contd. on page 6)

# Safety Data Sheet

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Revision: 06.02.2009

**Trade name: Markerspray Eco**  
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(Contd. from page 5)

- **Uncleaned packagings:**
- **Recommendation:** Dispose of packaging according to regulations on the disposal of packagings.

### 14 Transport information

- **Land transport ADR/RID (cross-border)**



- **ADR/RID-GGVSE Class:** 2 5F Gases.
- **UN-Number:** 1950
- **Packaging group:** -
- **Label** 2.1
- **Designation of goods:** 1950 AEROSOLS

- **Maritime transport IMDG:**



- **IMDG Class:** 2.1
- **UN Number:** 1950
- **Label** 2.1
- **Packaging group:** -
- **EMS Number:** F-D,S-U
- **Marine pollutant:** No
- **Correct technical name:** AEROSOLS

- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 2.1
- **UN/ID Number:** 1950
- **Label** 2.1
- **Packaging group:** -
- **Correct technical name:** AEROSOLS, flammable

### 15 Regulatory information

- **Designation according to EC guidelines:**  
 The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)
- **Code letter and hazard designation of product:**



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(Contd. on page 7)

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(Contd. from page 6)

- **Risk phrases:**

12 Extremely flammable.

- **Safety phrases:**

2 Keep out of the reach of children.

23 Do not breathe aerosol.

29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

46 If swallowed, seek medical advice immediately and show this container or label.

51 Use only in well-ventilated areas.

- **Special designation of certain preparations:**

Pressurized 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 a naked flame or any incandescent material. Keep away from sources of ignition - No smoking.

- **National regulations**

- **Information about limitation of use:**

Employment restrictions concerning young persons must be observed.

- **Technical instructions (air):**

Class	Share in %
NK	50-100

- **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

- **Other regulations, limitations and prohibitive regulations**

Observe the "Technische Regel Druckgase" (TRG 300) during handling and storage.

### 16 Other information:

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant R-phrases**

11 Highly flammable.

12 Extremely flammable.

36 Irritating to eyes.

66 Repeated exposure may cause skin dryness or cracking.

67 Vapours may cause drowsiness and dizziness.

- **Department issuing data specification sheet:**

The safety data sheets were drawn up in cooperation with the Umweltkanzlei Dr. Rhein, Phone: +49(0)5066-900990 and the Dekra Umwelt GmbH, Phone: +49(0)511-96355-0.