

**Substance Name: Dimethyl sulphate**

**EC Number: 201-058-1**

**CAS Number: 77-78-1**

**SUPPORT DOCUMENT FOR IDENTIFICATION OF**

**DIMETHYL SULPHATE**

**AS A SUBSTANCE OF VERY HIGH CONCERN BECAUSE OF ITS  
CMR<sup>1</sup> PROPERTIES**

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<sup>1</sup> CMR means carcinogenic, mutagenic or toxic for reproduction



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**Substance Name: Dimethyl sulphate**

**EC Number: 201-058-1**

**CAS number: 77-78-1**

The substance is identified as substance meeting the criteria of Article 57 (a) of Regulation (EC) 1907/2006 (REACH) owing to its classification as carcinogen category 1B<sup>2</sup> which corresponds to classification as carcinogen category 2<sup>3</sup>.

**Summary of how the substance meets the criteria set out in Article 57 (a) of REACH (Carc. 1B).**

Dimethyl sulphate is listed as Index number 016-023-00-4 in Regulation (EC) No 1272/2008 and classified in Annex VI, part 3, Table 3.1 (list of harmonised classification and labelling of hazardous substances) as carcinogen, Carc. 1B (H350: "May cause cancer."). The corresponding classification in Annex VI, part 3, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC) of Regulation (EC) No 1272/2008 is carcinogen, Carc. Cat. 2; R45 ("May cause cancer.").

Therefore, this classification of dimethyl sulphate in Regulation (EC) No 1272/2008 shows that the substance meets the criteria for classification as carcinogenic in accordance with Article 57 (a) of REACH.

**Registration dossiers submitted for the substance? Yes**

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<sup>2</sup> Classification in accordance with Regulation (EC) No 1272/2008 Annex VI, part 3, Table 3.1 List of harmonised classification and labelling of hazardous substances.

<sup>3</sup> Classification in accordance with Regulation (EC) No 1272/2008, Annex VI, part 3, Table 3.2 List of harmonised classification and labelling of hazardous substances (from Annex I to Council Directive 67/548/EEC).

## JUSTIFICATION

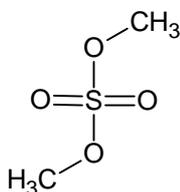
### 1 Identity of the substance and physical and chemical properties

#### 1.1 Name and other identifiers of the substance

**Table 1: Substance identity**

|                                                       |                                                |
|-------------------------------------------------------|------------------------------------------------|
| <b>EC number:</b>                                     | 201-058-1                                      |
| <b>EC name:</b>                                       | dimethyl sulphate                              |
| <b>CAS number (in the EC inventory):</b>              | 77-78-1                                        |
| <b>CAS number:</b><br><b>Deleted CAS numbers:</b>     | 77-78-1<br>62086-97-9, 98478-67-2, 139443-72-4 |
| <b>CAS name:</b>                                      | Sulfuric acid, dimethyl ester                  |
| <b>IUPAC name:</b>                                    | Dimethyl sulfate                               |
| <b>Index number in Annex VI of the CLP Regulation</b> | 016-023-00-4                                   |
| <b>Molecular formula:</b>                             | C <sub>2</sub> H <sub>6</sub> O <sub>4</sub> S |
| <b>Molecular weight range:</b>                        | 126.1 g/mol                                    |
| <b>Synonyms:</b>                                      |                                                |

#### Structural formula:



#### 1.2 Composition of the substance

**Name:** Dimethyl sulphate

**Description:** ---

**Degree of purity:** 98 – 100 %

**Table 2: Constituents**

| <b>Constituents</b>            | <b>Typical concentration</b> | <b>Concentration range</b> | <b>Remarks</b>                                                |
|--------------------------------|------------------------------|----------------------------|---------------------------------------------------------------|
| Dimethyl sulphate<br>201-058-1 |                              | 98 – 100 %                 | Information according to the available registration dossiers. |

## 2 Harmonised classification and labelling

Dimethyl sulphate is listed by Index number 016-023-00-4 in Annex VI, part 3 of Regulation (EC) No 1272/2008 as follows:

**Table 3: Classification according to part 3 of Annex VI, Table 3.1 (list of harmonised classification and labelling of hazardous substances) of Regulation (EC) No 1272/2008**

| Index No     | International Chemical Identification | EC No     | CAS No  | Classification                                                                           |                                              | Labelling                      |                                              |                                 | Spec. Conc. Limits, M-factors                                                       | Notes |
|--------------|---------------------------------------|-----------|---------|------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------|----------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------|-------|
|              |                                       |           |         | Hazard Class and Category Code(s)                                                        | Hazard statement code(s)                     | Pictogram, Signal Word Code(s) | Hazard statement code(s)                     | Suppl. Hazard statement code(s) |                                                                                     |       |
| 016-023-00-4 | dimethyl sulphate                     | 201-058-1 | 77-78-1 | Carc. 1B<br>Muta. 2<br>Acute Tox. 2 *<br>Acute Tox. 3 *<br>Skin Corr. 1B<br>Skin Sens. 1 | H350<br>H341<br>H330<br>H301<br>H314<br>H317 | GHS06<br>GHS08<br>GHS05<br>Dgr | H350<br>H341<br>H330<br>H301<br>H314<br>H317 |                                 | Carc. 1B; H350: C ≥ 0,01 %<br>Muta. 2; H341: C ≥ 0,01 %<br>STOT SE 3; H335: C ≥ 5 % |       |

**Table 4: Classification according to part 3 of Annex VI, Table 3.2 (list of harmonized classification and labelling of hazardous substances from Annex I of Council Directive 67/548/EEC) of Regulation (EC) No 1272/2008**

| Index No     | International Chemical Identification | EC No     | CAS No  | Classification                                                               | Labelling                                      | Concentration Limits                                                                                               | Notes |
|--------------|---------------------------------------|-----------|---------|------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------|
| 016-023-00-4 | dimethyl sulphate                     | 201-058-1 | 77-78-1 | Carc. Cat. 2; R45<br>Muta. Cat. 3; R68<br>T+; R26<br>T; R25<br>C; R34<br>R43 | T+<br>R: 45-25-<br>26-34-43-<br>68<br>S: 53-45 | Car. Cat. 2; R45: C ≥ 0,01 %<br>Muta. Cat. 3, R68: C ≥ 0,01 %<br>C; R34: C ≥ 10 %<br>Xi; R36/37/38: 5 % ≤ C < 10 % | E     |

### **3 Environmental fate properties**

*Not relevant for the identification of the substance as SVHC in accordance with Article 57(a).*

### **4 Human health hazard assessment**

*See section 2 on harmonised classification and labelling.*

### **5 Environmental hazard assessment**

*Not relevant for the identification of the substance as SVHC in accordance with Article 57(a).*

## **6 Conclusions on the SVHC Properties**

### **6.1 CMR assessment**

Dimethyl sulphate is listed as Index number 016-023-00-4 in Regulation (EC) No 1272/2008 and classified in Annex VI, part 3, Table 3.1 (list of harmonised classification and labelling of hazardous substances) as carcinogen, Carc. 1B (H350: "May cause cancer."). The corresponding classification in Annex VI, part 3, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC) of Regulation (EC) No 1272/2008 is carcinogen, Carc. Cat. 2, R45 ("May cause cancer.").

Therefore, this classification of dimethyl sulphate in Regulation (EC) No 1272/2008 shows that the substance meets the criteria for classification as carcinogenic in accordance with Article 57 (a) of REACH.