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<b>Bismuth Plating and Co-Plating Solutions (PDV)</b>		

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking**
**1.1 Product Identifiers**

Product name : Bismuth Plating Solution (PDV); Bismuth Co-Plating Solution (PDV)  
Product number : R-300-500PLA-BI; R-300-500NAC-BI  
Substance name : Bismuth Plating Solution (PDV); Bismuth Co-Plating Solution (PDV)  
REACH reg. no. : This product is exempt from registration, insufficient annual volume.

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Reagent for analysis

**1.3 Details of the supplier of the safety data sheet**

Company : Modern Water Monitoring Limited  
: Units 15-17 Cambridge Science Park  
: Cambridge, CB4 0FQ  
: UK  
Email : [info@modernwater.co.uk](mailto:info@modernwater.co.uk)

**1.4 Emergency telephone number**

+44 (0) 1483 696030

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**SECTION 2: Hazards identification**
**2.1 Classification of the substance or mixture**

Not hazardous

**2.2 Label elements: None required**

Signal Word: None required

Hazard statements: None required

Precautionary statements: None required


**2.3 Other hazards : Not known**


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**SECTION 3: Composition/information on ingredients**
**3.1 Substance : Not relevant, see 3.2 Mixtures****3.2 Mixtures**

Hazardous ingredients classification according to Regulation (EC) No. 1272/2008 CLP

Substance name	Concentration	CAS No	EC No
Acetic acid	<1%	64-19-7	200-580-7
H226 – Flammable liquid and vapour			
H314 – causes severe skin burns and eye damage			

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**SECTION 4: First Aid measures**
**4.1 Description of first aid measure**

**General advice:** When in doubt or if symptoms observed, get medical advice. Show this safety data sheet to the doctor in attendance.

**After Inhalation:** Remove casualty to fresh air and keep warm. If breathing difficult or respiratory tract irritation get medical assistance.

**In case of skin contact:** Remove contaminated clothing. Wash off with soap and plenty of water.

**After eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes. Remove contact lenses. Get urgent medical assistance.

**In case of ingestion:** If accidentally swallowed rinse mouth with plenty of water (only if person is conscious). Do not induce vomiting. Get medical attention.

**4.2 Most important symptoms and effects, both acute and delayed**

No information available.

**4.3 Indication of any immediate medical attention and special treatment needed**

No information available.

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**SECTION 5: Fire-fighting measures.**
**5.1 Extinguishing media:**
**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable extinguishing media**

No restriction

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

None

**5.3 Advice for firefighters**

Not combustible

**5.4 Additional information**

None

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**SECTION 6: Accidental release measures.**
**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment (see section 8). Avoid breathing vapours, mist or gas. Ensure adequate ventilation.



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### 6.2 Environmental precautions

Do not let large quantities enter drains or surface water. Spills are to be contained. Discharge into environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material. Keep in a suitable closed container for disposal. Dispose correctly, referring to local regulations.

### 6.4 References to other sections

For disposal see section 13.

## SECTION 7: Handling and storage.

### 7.1 Precautions for safe handling

Avoid exposure to skin and eyes.

### 7.2 Conditions for safe storage, including and incompatibilities

Store in a cool place, below 25°C. Keep contained upright and the cap tightly closed.

### 7.3 Specific end use(s)

Apart from uses specified in section 1.2, no other specific uses.

## SECTION 8: Exposure controls/personal protection.

### 8.1 Control parameters

Components with workplace control parameters

Component	CAS-No	Value type	Limit value	
Acetic acid	64-19-7	STEL	15ppm (37mg/m <sup>3</sup> )	EU and UK EH40 WEL
		TWA	10ppm (25mg/m <sup>3</sup> )	EU and UK EH40 WEL

### 8.2 Exposure controls:

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at end of workday.

#### Personal protective equipment

Wear suitable protective clothing

##### Eyeface protection

Safety glasses with side-shields conforming to EN166 or equivalent standard.

##### Skin protection

Handle with gloves (PVC or nitrile)

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### SECTION 9: Physical and chemical properties.

#### 9.1 Information on basic physical and chemical properties

Appearance	Clear colourless liquid
Odour	slight odour of acetic acid
Odour threshold	no data available
pH	4.5 (Approx.)
Melting point/range (°C)	no data available
Boiling point (°C):	100 (Approx.)
Flash point	not flammable
Evaporation rate	not applicable
Flammability (solid/gas)	not applicable
Upper/lower flammability rates	not flammable
Vapour pressure (mmHg at 20°C)	25 (Approx.)
Vapour density	not applicable
Relative density	1.0
Water solubility	completely miscible
Partition coefficient: n-octane/water	not applicable
Auto ignition temperature	no data available
Decomposition temperature	no data available
Viscosity	not applicable
Explosive properties	no data available
Oxidising properties	no data available

#### 9.2 Other data

None

### SECTION 10: Stability and reactivity.

#### 10.1 Reactivity

Mildly reactive to metals and bases.

#### 10.2 Chemical stability

This product is chemically stable under standard ambient conditions (room temperature).

#### 10.3 Possibility of hazardous reactions

No data available.

#### 10.4 Conditions to avoid

No data available.

#### 10.5 Incompatible materials

Strong oxidising agents, strong bases.

#### 10.6 Hazardous decomposition products

None

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**SECTION 11: Toxicological information.**

**11.1 Information on toxicological effects**

**Acute toxicity**

No data available

**Skin corrosion/irritation**

May cause skin irritation.

**Serious eye damage/eye irritation**

May cause eye irritation

**Respiration or skin sensitisation**

Not sensitising

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No indication of human carcinogenicity

**Reproductive toxicity**

No data available

**Specific target organ exposure – single exposure**

No data available

**Specific target organ exposure – repeated exposure**

No data available

**Aspiration hazard**

Not applicable

**Other adverse effects**

No data available

**SECTION 12: Ecological information.**

**12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available, expected to biodegrade, miscible with water

**12.3 Bioaccumulative potential**

No data available, Bioaccumulation unlikely

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### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

None that are known

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## SECTION 13: Disposal considerations.

### 13.1 Waste treatment methods:

#### Product

Dispose in accordance to local regulations; consult the local waste disposal expert.

#### Contaminated packaging

Dispose in accordance to local regulations, the same way as the product itself.

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## SECTION 14: Transport information.

Non – Hazardous for air, road and sea transport.

### Land transport (ADR/RID)

14.1	UN number	Not applicable
14.2	UN proper shipping name	Not applicable
14.3	Transport hazard	Not applicable
14.4	Packaging group	Not applicable
14.5	Environmental hazards	Not applicable
14.6	Special precaution for user	Not applicable

### Air transport (IATA)

14.1	UN number	Not applicable
14.2	UN proper shipping name	Not applicable
14.3	Transport hazard	Not applicable
14.4	Packaging group	Not applicable
14.5	Environmental hazards	Not applicable
14.6	Special precaution for user	Not applicable

### SEA transport (IMDG)

14.1	UN number	Not applicable
14.2	UN proper shipping name	Not applicable
14.3	Transport hazard	Not applicable
14.4	Packaging group	Not applicable
14.5	Environmental hazards	Not applicable
14.6	Special precaution for user	Not applicable

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**SECTION 15: Regulatory information.**

**15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture**

None applicable

**15.2 Chemical Safety Assessment**

No data available

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**SECTION 16: Other information.**

**Abbreviations and acronyms**

ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road

Bi - Bismuth

IATA – International Air Transportation Association

IMDG – international Maritime Code of Dangerous Goods

STEL – Short term exposure limit

TWA – Time Weighted Average

WEL – Workplace Exposure Limit

**Symbol, R and S phrases for this mixture**

None

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