

SAFETY DATA SHEET



Residual Solvent Revised Method 467 Class C, Part Number 5190-0493

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Residual Solvent Revised Method 467 Class C, Part Number 5190-0493
Part no. : 5190-0493

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

Identified uses : Reagents and Standards for Analytical Chemistry Laboratory Use
 1 ml
Uses advised against : None known.

1.3 Details of the supplier of the safety data sheet

Agilent Technologies LDA UK Ltd.
 5500 Lakeside Cheadle Royal Business Park,
 Cheadle, Cheshire, SK8 3GR
 United Kingdom
 Tel: +44 (0) 345 712 5292
 0800 603 1000
e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

360D REPRODUCTIVE TOXICITY Category 1B

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms



Signal word : Danger

Hazard statements : 360D - May damage the unborn child.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
 P280 - Wear protective gloves, protective clothing and eye or face protection.

Response : P308 + P313 - IF exposed or concerned: Get medical advice or attention.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Residual Solvent Revised Method 467 Class C, Part Number 5190-0493

SECTION 2: Hazards identification

- Supplemental label elements** : Not applicable.
- Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Restricted to professional users.

Special packaging requirements

- Containers to be fitted with child-resistant fastenings** : Not applicable.
- Tactile warning of danger** : Not applicable.

2.3 Other hazards

- Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII** : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
- Other hazards which do not result in classification** : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Type
<input checked="" type="checkbox"/> N,N-dimethylacetamide	EC: 204-826-4 CAS: 127-19-5 Index: 616-011-00-4	<1	Acute Tox. 4, H312 Acute Tox. 4, H332 Repr. 1B, H360D	[1] [2]
N,N-dimethylformamide	EC: 200-679-5 CAS: 68-12-2 Index: 616-001-00-X	<1	Acute Tox. 4, H312 Acute Tox. 4, H332 Eye Irrit. 2, H319 Repr. 1B, H360D	[1] [2]
ethanediol	EC: 203-473-3 CAS: 107-21-1 Index: 603-027-00-1	≤0.3	Acute Tox. 4, H302	[1] [2]
N-methyl-2-pyrrolidone	EC: 212-828-1 CAS: 872-50-4 Index: 606-021-00-7	<0.3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 1B, H360D STOT SE 3, H335	[1] [2]
Formamide	EC: 200-842-0 CAS: 75-12-7	≤0.1	Carc. 2, H351 Repr. 1B, H360D STOT RE 2, H373 (blood) (oral)	[1] [2]
2-ethoxyethanol	EC: 203-804-1 CAS: 110-80-5 Index: 603-012-00-X	<0.1	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 3, H331 Repr. 1B, H360FD	[1] [2]
2-methoxyethanol	EC: 203-713-7 CAS: 109-86-4 Index: 603-011-00-4	≤0.1	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Repr. 1B, H360FD	[1] [2]

SECTION 3: Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : Specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

SECTION 7: Handling and storage

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

- Recommendations** : Industrial applications, Professional applications.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
N,N-dimethylacetamide	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 72 mg/m ³ 15 minutes. STEL: 20 ppm 15 minutes. TWA: 10 ppm 8 hours. TWA: 36 mg/m ³ 8 hours.
N,N-dimethylformamide	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 30 mg/m ³ 15 minutes. STEL: 10 ppm 15 minutes. TWA: 5 ppm 8 hours. TWA: 15 mg/m ³ 8 hours.
ethanediol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. TWA: 10 mg/m ³ 8 hours. Form: Particulate TWA: 20 ppm 8 hours. Form: Vapour STEL: 40 ppm 15 minutes. Form: Vapour TWA: 52 mg/m ³ 8 hours. Form: Vapour STEL: 104 mg/m ³ 15 minutes. Form: Vapour
N-methyl-2-pyrrolidone	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 80 mg/m ³ 15 minutes. STEL: 20 ppm 15 minutes. TWA: 40 mg/m ³ 8 hours. TWA: 10 ppm 8 hours.

SECTION 8: Exposure controls/personal protection

Formamide	EH40/2005 WELs (United Kingdom (UK), 1/2020). STEL: 56 mg/m ³ 15 minutes. STEL: 30 ppm 15 minutes. TWA: 37 mg/m ³ 8 hours. TWA: 20 ppm 8 hours.
2-ethoxyethanol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. TWA: 2 ppm 8 hours. TWA: 8 mg/m ³ 8 hours.
2-methoxyethanol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. TWA: 1 ppm 8 hours. TWA: 3 mg/m ³ 8 hours.

Biological exposure indices

Product/ingredient name	Exposure indices
<input checked="" type="checkbox"/> N,N-dimethylacetamide	EH40/2005 BMGVs (United Kingdom (UK), 8/2018) BGV: 100 mmol/mol creatinine, N-methylacetamide [in urine]. Sampling time: post shift.

Recommended monitoring procedures : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
<input checked="" type="checkbox"/> N,N-dimethylacetamide	DNEL	Long term Oral	1 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	2.7 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	5.6 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	7 mg/m ³	General population	Systemic
	DNEL	Short term Dermal	13.6 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	23 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	36 mg/m ³	Workers	Systemic
N,N-dimethylformamide	DNEL	Long term Inhalation	6 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	1.1 mg/kg bw/day	Workers	Systemic
ethanediol	DNEL	Long term Inhalation	7 mg/m ³	General population	Local
	DNEL	Long term Inhalation	35 mg/m ³	Workers	Local
	DNEL	Long term Dermal	53 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	106 mg/kg bw/day	Workers	Systemic
N-methyl-2-pyrrolidone	DNEL	Short term Inhalation	14.4 mg/m ³	Workers	Systemic
	DNEL	Short term Dermal	4.8 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	14.4 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	4.8 mg/kg bw/day	Workers	Systemic
Formamide	DNEL	Long term Dermal	0.952 mg/kg bw/day	Workers	Systemic
	DNEL	Long term	6.6 mg/m ³	Workers	Systemic

SECTION 8: Exposure controls/personal protection

2-ethoxyethanol	DNEL	Inhalation Long term	83 µg/m ³	Workers	Systemic
	DNEL	Inhalation Long term Dermal	0.3 mg/kg bw/day	Workers	Systemic
2-methoxyethanol	DNEL	Long term Oral	0.11 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.22 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	0.31 mg/m ³	Workers	Systemic

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties**Appearance**

Physical state	: Liquid.				
Colour	: Colourless.				
Odour	: Not available.				
Odour threshold	: Not available.				
Melting point/freezing point	: 18.4°C				
Initial boiling point and boiling range	: 189°C				
Flammability	: Not applicable.				
Upper/lower flammability or explosive limits	: Lower: 2.6% Upper: 28.5%				
Flash point	: Closed cup: 95°C				
Auto-ignition temperature	: 215°C				
Decomposition temperature	: Not available.				
pH	: Not available.				
Viscosity	: Not available.				
Solubility(ies)	: <table border="1"> <thead> <tr> <th>Media</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Water</td> <td>Soluble</td> </tr> </tbody> </table>	Media	Result	Water	Soluble
Media	Result				
Water	Soluble				

Miscible with water	: Yes.
Partition coefficient: n-octanol/water	: Not applicable.
Vapour pressure	: 0.0049 kPa (0.037 mm Hg)
Evaporation rate	: Not available.
Relative density	: Not available.
Density	: 1.101 g/cm ³
Vapour density	: Not available.
Explosive properties	: Not available.
Oxidising properties	: Not available.

Particle characteristics

Median particle size	: Not applicable.
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9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: <input checked="" type="checkbox"/> No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: <input checked="" type="checkbox"/> The product is stable.
10.3 Possibility of hazardous reactions	: <input checked="" type="checkbox"/> Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: <input checked="" type="checkbox"/> No specific data.

SECTION 10: Stability and reactivity

10.5 Incompatible materials : May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<input checked="" type="checkbox"/> N,N-dimethylacetamide	LC50 Inhalation Vapour	Rat	2475 ppm	1 hours
	LD50 Dermal	Rabbit	2240 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
N,N-dimethylformamide	LC50 Inhalation Vapour	Rat	3421 ppm	1 hours
	LC50 Inhalation Vapour	Rat	1948 ppm	4 hours
	LD50 Oral	Rat	4000 mg/kg	-
ethanediol	LD50 Dermal	Rabbit	9.5 g/kg	-
	LD50 Oral	Rat	4700 mg/kg	-
N-methyl-2-pyrrolidone	LC50 Inhalation Dusts and mists	Rat - Male, Female	>5.1 mg/l	4 hours
	LD50 Dermal	Rabbit	8 g/kg	-
	LD50 Oral	Rat	3914 mg/kg	-
Formamide	LC50 Inhalation Dusts and mists	Rat - Male	>21 mg/l	4 hours
	LD50 Dermal	Rabbit	17 g/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
2-ethoxyethanol	LC50 Inhalation Gas.	Rat	2646 ppm	4 hours
	LD50 Dermal	Rabbit	3.6 g/kg	-
	LD50 Dermal	Rat	3900 mg/kg	-
2-methoxyethanol	LD50 Oral	Rat	2125 mg/kg	-
	LC50 Inhalation Gas.	Rat	1984 ppm	4 hours
	LD50 Dermal	Rabbit	1280 mg/kg	-
	LD50 Oral	Rat	2370 mg/kg	-

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
<input checked="" type="checkbox"/> N,N-dimethylacetamide	4300	1100	N/A	11	N/A
N,N-dimethylformamide	4000	1500	N/A	11	N/A
ethanediol	500	9500	N/A	N/A	N/A
N-methyl-2-pyrrolidone	3914	8000	N/A	N/A	N/A
Formamide	4000	17000	N/A	N/A	N/A
2-ethoxyethanol	500	3600	N/A	3	N/A
2-methoxyethanol	500	1280	4500	N/A	N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<input checked="" type="checkbox"/> N,N-dimethylacetamide	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 mg	-
N,N-dimethylformamide	Eyes - Severe irritant	Rabbit	-	100 %	-
	Eyes - Mild irritant	Rabbit	-	1 hours 100 mg	-
ethanediol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	6 hours 1440 mg	-
N-methyl-2-pyrrolidone	Skin - Mild irritant	Rabbit	-	555 mg	-
	Eyes - Moderate irritant	Rabbit	-	100 mg	-

SECTION 11: Toxicological information

Formamide	Eyes - Severe irritant	Rabbit	-	100 mg	-
2-ethoxyethanol	Eyes - Mild irritant	Guinea pig	-	10 ug	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
2-methoxyethanol	Eyes - Moderate irritant	Rabbit	-	50 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
	Eyes - Mild irritant	Guinea pig	-	10 ug	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 483 mg	-

Skin : Repeated exposure may cause skin dryness or cracking.

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> N-methyl-2-pyrrolidone	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> Formamide	Category 2	oral	blood

Aspiration hazard

Not available.

Information on likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

SECTION 11: Toxicological information

Eye contact : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : May damage the unborn child.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
N,N-dimethylformamide	Acute EC50 14.4 mg/l Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	Acute EC50 7100000 µg/l Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
	Acute LC50 >100000 µg/l Marine water	Crustaceans - Common shrimp, sand shrimp - Crangon crangon - Adult	48 hours
	Chronic NOEC 1500 mg/l Fresh water	Daphnia - Water flea - Daphnia magna	21 days
	Chronic NOEC 0.1 ml/L Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss - Embryo	30 days
ethanediol	Acute LC50 6900000 µg/l Fresh water	Crustaceans - Water flea - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 41000 mg/l Fresh water	Daphnia - Water flea - Daphnia magna - Neonate	48 hours
	Acute LC50 8050000 µg/l Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
N-methyl-2-pyrrolidone	Acute LC50 1.23 ppm Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	Acute LC50 832 ppm Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
2-ethoxyethanol	Acute LC50 >10000 ppm Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
2-methoxyethanol	Acute LC50 >100 ppm Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

SECTION 12: Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
ethanediol	OECD 301A Ready Biodegradability - DOC Die-Away Test	90 to 100 % - Readily - 10 days	-	-
Formamide	OECD 301A Ready Biodegradability - DOC Die-Away Test	99 % - Readily - 28 days	-	-
2-methoxyethanol	302B Inherent Biodegradability: Zahn-Wellens/EMPA Test	>90 % - 8 days	-	-

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
N,N-dimethylacetamide	-	-	Readily
ethanediol	-	-	Readily
N-methyl-2-pyrrolidone	-	-	Readily
Formamide	-	-	Readily
2-ethoxyethanol	-	-	Readily
2-methoxyethanol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
N,N-dimethylacetamide	-0.77	-	low
N,N-dimethylformamide	-1.01	0.79	low
ethanediol	-1.36	-	low
N-methyl-2-pyrrolidone	-0.46	-	low
Formamide	-0.82	-	low
2-ethoxyethanol	-0.32	-	low
2-methoxyethanol	-0.77	3.1	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

SECTION 13: Disposal considerations

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No.	No.	No.

Additional information

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

Intrinsic property	Ingredient name	Status	Reference number	Date of revision
Toxic to reproduction	N,N-dimethylacetamide	Candidate	-	12/19/2011
	N,N-dimethylformamide	Candidate	-	12/19/2012
	1-methyl-2-pyrrolidone	Candidate	-	6/20/2011
	formamide	Candidate	-	6/18/2012
	2-ethoxyethanol	Candidate	-	12/15/2010
	2-methoxyethanol	Candidate	-	12/15/2010

Ozone depleting substances

Not listed.

SECTION 15: Regulatory information

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Ingredient name	CAS no.	Status
<input checked="" type="checkbox"/> Residual Solvent Revised Method 467 Class C, Part Number 5190-0493		30
N,N-dimethylacetamide	127-19-5	72
N,N-Dimethylformamide	68-12-2	72
N-Methyl-2-pyrrolidone	872-50-4	71
N-Methyl-2-pyrrolidone	872-50-4	72

Label : Restricted to professional users.

Seveso Directive

This product is not controlled under the Seveso Directive.

EU regulations

**Industrial emissions
(integrated pollution
prevention and control) -
Air** : Listed

**Industrial emissions
(integrated pollution
prevention and control) -
Water** : Not listed

**15.2 Chemical safety
assessment** : This product contains substances for which Chemical Safety Assessments might still be required.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Eurasian Economic Union** : **Russian Federation inventory**: All components are listed or exempted.
- Japan** : **Japan inventory (CSCL)**: All components are listed or exempted.
Japan inventory (ISHL): All components are listed or exempted.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.

SECTION 15: Regulatory information

Taiwan	: All components are listed or exempted.
Thailand	: All components are listed or exempted.
Turkey	: Not determined.
United States	: All components are active or exempted.
Viet Nam	: All components are listed or exempted.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms	: ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EUH statement = CLP-specific Hazard statement N/A = Not available PBT = Persistent, Bioaccumulative and Toxic PNEC = Predicted No Effect Concentration RRN = REACH Registration Number vPvB = Very Persistent and Very Bioaccumulative
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Procedure used to derive the classification

Classification	Justification
Repr. 1B, H360D	Calculation method

Full text of abbreviated H statements

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H360D	May damage the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

Full text of classifications

Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Carc. 2	CARCINOGENICITY - Category 2
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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Notice to reader

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