



SAFETY DATA SHEET SUPERSOLVE AS

According to Regulation (EC) No 1907/2006, Annex II, as amended.

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

1.1. Product identifier

Product name SUPERSOLVE AS

Internal identification A145

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

Identified uses Cleaning agent.

Uses advised against Use only for intended applications.

1.3. Details of the supplier of the safety data sheet

Supplier ARROW SOLUTIONS
RAWDON ROAD
MOIRA
SWADLINCOTE
DERBYSHIRE
DE12 6DA
TEL: +44 (0)1283 221044
FAX: +44 (0)1283 225731
sales@arrowchem.com

1.4. Emergency telephone number

Emergency telephone +44 (0) 777 8505 330 (24 hrs).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Aerosol 1 - H222, H229

Health hazards Skin Irrit. 2 - H315 STOT SE 3 - H336

Environmental hazards Aquatic Chronic 2 - H411

2.2. Label elements

Pictogram



Signal word

Danger

Hazard statements

H222 Extremely flammable aerosol.
H229 Pressurised container: may burst if heated.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

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Precautionary statements	<p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P211 Do not spray on an open flame or other ignition source.</p> <p>P251 Do not pierce or burn, even after use.</p> <p>P261 Avoid breathing spray.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P273 Avoid release to the environment.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P280 Wear protective gloves, eye and face protection.</p> <p>P312 Call a POISON CENTRE/doctor if you feel unwell.</p> <p>P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
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Contains HYDROCARBONS, C7-C9, ISOALKANES

Detergent labelling 15 - < 30% aliphatic hydrocarbons

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE 60-100%		
CAS number: 29118-24-9	EC number: 471-480-0	REACH registration number: 01-0000019758-54-XXXX
Classification Press. Gas (Liq.) - H280		
HYDROCARBONS, C7-C9, ISOALKANES 10-30%		
CAS number: —	EC number: 921-728-3	REACH registration number: 01-2119471305-42-XXXX
Classification Flam. Liq. 2 - H225 Skin Irrit. 2 - H315 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411		
HYDROCARBONS C6 - C7 ISOALKANES, CYCLICS <5% n - HEXANE 5-10%		
CAS number: 92062-15-2	EC number: 926-605-8	REACH registration number: 01-2119486291-36-XXXX
Classification Flam. Liq. 2 - H225 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411		

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DIFLUOROETHANE			1-5%
CAS number: 75-37-6	EC number: 200-866-1	REACH registration number: 01-2119474440-43-XXXX	
Classification			
Flam. Gas 1 - H220			
Press. Gas (Liq.) - H280			

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Show this Safety Data Sheet to the medical personnel. Move affected person to fresh air at once. If medical advice is needed, have product container or label at hand. Get medical attention if any discomfort continues.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. DO NOT induce vomiting. Get medical attention immediately.
Skin contact	Wash skin thoroughly with soap and water. Use suitable lotion to moisturise skin.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse. Get medical attention if any discomfort continues.

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

Inhalation	May cause drowsiness or dizziness.
Ingestion	Gastrointestinal symptoms, including upset stomach.
Skin contact	Causes skin irritation. Repeated exposure may cause skin dryness or cracking.
Eye contact	May cause discomfort.

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

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with the following media: Foam, carbon dioxide or dry powder.
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5.2. Special hazards arising from the substance or mixture

Specific hazards	Extremely flammable aerosol. Pressurised container: may burst if heated
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Carbon monoxide (CO). Carbon dioxide (CO ₂). Hydrocarbons. Hydrogen fluoride (HF).

5.3. Advice for firefighters

Protective actions during firefighting	Cool containers exposed to flames with water until well after the fire is out.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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Personal precautions

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapours. Provide adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. No smoking, sparks, flames or other sources of ignition near spillage. Do not touch or walk into spilled material. Take precautionary measures against static discharges. Avoid contact with contaminated tools and objects. Do not handle broken packages without protective equipment. Do not enter storage areas or confined spaces unless adequately ventilated. If aerosol cans are ruptured, care should be taken due to the rapid escape of the pressurised contents and propellant. Wash thoroughly after dealing with a spillage.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Eliminate all sources of ignition. Provide adequate ventilation. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Wash thoroughly after dealing with a spillage.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves, eye and face protection. Provide adequate ventilation. Avoid contact with skin, eyes and clothing. Do not breathe vapour/spray. Keep container in a well-ventilated place. Avoid release to the environment. Avoid contact with contaminated tools and objects. Do not expose to temperatures exceeding 50°C/122°F. Do not pierce or burn, even after use. Do not spray on an open flame or other ignition source. Do not eat, drink or smoke when using this product. Do not handle broken packages without protective equipment. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store at temperatures between 4°C and 40°C. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Storage class

Flammable compressed gas storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE

Long-term exposure limit (8-hour TWA): 800 ppm gas and aerosol mists

DIFLUOROETHANE

Long-term exposure limit (8-hour TWA): WEL 1000 ppm gas and aerosol mists

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WEL = Workplace Exposure Limit

HYDROCARBONS, C7-C9, ISOALKANES

DNEL	<p>Workers - Inhalation; Long term systemic effects: 2035 mg/m³</p> <p>Workers - Dermal; Long term systemic effects: 773 mg/kg/day</p> <p>General population - Inhalation; Long term systemic effects: 608 mg/m³</p> <p>General population - Dermal; Long term systemic effects: 699 mg/kg/day</p> <p>General population - Oral; Long term systemic effects: 699 mg/kg/day</p>
PNEC	<p>- Fresh water; N/A</p> <p>- Marine water; N/A</p> <p>- Intermittent release; N/A</p> <p>- STP; N/A</p> <p>- Sediment (Freshwater); N/A</p> <p>- Soil; N/A</p>

HYDROCARBONS C6 - C7 ISOALKANES, CYCLICS <5% n - HEXANE (CAS: 92062-15-2)

DNEL	<p>Workers - Inhalation; Long term systemic effects: 5306 mg/m³</p> <p>Workers - Dermal; Long term systemic effects: 13694 mg/kg/day</p> <p>General population - Inhalation; Long term systemic effects: 1131 mg/m³</p> <p>General population - Dermal; Long term systemic effects: 1377 mg/kg/day</p> <p>General population - Oral; Long term systemic effects: 1301 mg/kg/day</p>
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DIFLUOROETHANE (CAS: 75-37-6)

DNEL	<p>Workers - Inhalation; Long term systemic effects: 2713 mg/m³</p> <p>General population - Inhalation; Long term systemic effects: 675 mg/m³</p>
PNEC	<p>- Fresh water; 0.048 mg/l</p> <p>- Marine water; 0.0048 mg/l</p> <p>- Intermittent release; 0.48 mg/l</p> <p>- STP; No emission to STP expected</p> <p>- Sediment (Freshwater); 0.19 mg/kg</p> <p>- Sediment (Marinewater); 0.019 mg/kg</p> <p>- Soil; 0.141 mg/kg</p>

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

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Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374. The selected gloves should have a breakthrough time of at least 4 hours. The breakthrough time for any glove material may be different for different glove manufacturers. When used with mixtures, the protection time of gloves cannot be accurately estimated. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Protective gloves should have a minimum thickness of 0.15 mm. Glove thickness is not necessarily a good measure of glove resistance as the permeation rate will depend on the exact glove composition. It should be noted that liquid may penetrate the gloves. For work of short duration or where a high degree of manual dexterity is needed, use protective gloves made of: Nitrile rubber. Laminate of polyethylene and ethylene vinyl alcohol (PE/EVOH). Polyvinyl alcohol (PVA). Specific work environments and material handling practices may vary, therefore safety procedures should be developed for each intended application. Repeated exposure to chemicals will degrade the ability of the glove to provide resistance to chemicals. The choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use.

Hygiene measures

Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Respirator selection must be based on exposure levels, the hazards of the product and the safe working limits of the selected respirator. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Wear a respirator fitted with the following cartridge: Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140. Gas and combination filter cartridges should comply with European Standard EN14387. This represents the minimum standard required and better specification protection should be used if available. Check that the respirator fits tightly and the filter is changed regularly. Gas filter, type A2. Organic vapour filter.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Aerosol.
Colour	Water-white.
Odour	Solvent.
pH	Not applicable.
Relative density	Not applicable.
Solubility(ies)	Insoluble in water.

9.2. Other information

Other information	Not determined.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Not determined.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid Flammable/combustible materials.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion products may include the following substances:
Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrocarbons. Hydrogen fluoride (HF).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Specific target organ toxicity - single exposure

Target organs Central nervous system

Inhalation May cause drowsiness or dizziness.

Ingestion Gastrointestinal symptoms, including upset stomach. Aspiration hazard if swallowed.

Skin contact Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

Eye contact May cause discomfort.

Toxicological information on ingredients.

HYDROCARBONS, C7-C9, ISOALKANES

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,000.0

Species Rabbit

Notes (dermal LD₅₀)

HYDROCARBONS C6 - C7 ISOALKANES, CYCLICS <5% n - HEXANE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,001.0

Species Rat

Notes (oral LD₅₀)

Acute toxicity - dermal

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Acute toxicity dermal (LD₅₀ 2,001.0 mg/kg)

Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 21.0

Species Rat

SECTION 12: Ecological Information

Ecotoxicity Toxic to aquatic life with long lasting effects.

12.1. Toxicity

Acute aquatic toxicity

Acute toxicity - fish Not determined.

Ecological information on ingredients.

TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: >119 mg/l, Cyprinus carpio (Common carp)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >160 mg/l, Daphnia magna

HYDROCARBONS, C7-C9, ISOALKANES

Acute aquatic toxicity

Acute toxicity - fish LL₅₀, 18.4 hours: 96 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates NOEC, : 0.17 mg/l, Daphnia magna

HYDROCARBONS C6 - C7 ISOALKANES, CYCLICS <5% n - HEXANE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 12 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 3 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hours: 30 mg/l, Scenedesmus subspicatus

12.2. Persistence and degradability

Persistence and degradability The product is expected to be biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

12.4. Mobility in soil

Mobility The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces. The product has poor water-solubility.

12.5. Results of PBT and vPvB assessment

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Results of PBT and vPvB assessment

This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

SECTION 14: Transport information

General For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

Special Provisions note

14.1. UN number

UN No. (ADR/RID) 1950

UN No. (IMDG) 1950

UN No. (ICAO) 1950

14.2. UN proper shipping name

Proper shipping name (ADR/RID) AEROSOLS

Proper shipping name (IMDG) AEROSOLS

Proper shipping name (ICAO) AEROSOLS

14.3. Transport hazard class(es)

ADR/RID class 2.1

ADR/RID classification code 5F

ADR/RID label 2.1

IMDG class 2.1

ICAO class/division 2.1

Transport labels



14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



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14.6. Special precautions for user

EmS	F-D, S-U
ADR transport category	2
Tunnel restriction code	(D)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

National regulations	Control of Substances Hazardous to Health Regulations 2002 (as amended).
EU legislation	<p>Council Directive of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers (75/324/EEC) (as amended).</p> <p>Regulation (EC) No 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents (as amended).</p> <p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).</p> <p>Commission Regulation (EU) No 453/2010 of 20 May 2010.</p> <p>Commission Regulation (EU) No 2015/830 of 28 May 2015.</p>
Guidance	Workplace Exposure Limits EH40.

15.2. Chemical safety assessment

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	<p>ATE: Acute Toxicity Estimate.</p> <p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.</p> <p>CAS: Chemical Abstracts Service.</p> <p>DNEL: Derived No Effect Level.</p> <p>EC₅₀: 50% of maximal Effective Concentration.</p> <p>IATA: International Air Transport Association.</p> <p>IMDG: International Maritime Dangerous Goods.</p> <p>LC₅₀: Lethal Concentration to 50 % of a test population.</p> <p>LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).</p> <p>NOEC: No Observed Effect Concentration.</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance.</p> <p>PNEC: Predicted No Effect Concentration.</p> <p>REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.</p> <p>UN: United Nations.</p> <p>vPvB: Very Persistent and Very Bioaccumulative.</p>
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Classification abbreviations and acronyms	Acute Tox. = Acute toxicity Aerosol = Aerosol Aquatic Acute = Hazardous to the aquatic environment (acute) Aquatic Chronic = Hazardous to the aquatic environment (chronic) Asp. Tox. = Aspiration hazard Flam. Gas = Flammable gas Flam. Liq. = Flammable liquid Press. Gas (Liq.) = Gas under pressure: Liquefied gas Skin Irrit. = Skin irritation STOT SE = Specific target organ toxicity-single exposure
Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	04/02/2019
Revision	4.0
Supersedes date	07/02/2018
SDS number	27440
Hazard statements in full	H220 Extremely flammable gas. H222 Extremely flammable aerosol. H225 Highly flammable liquid and vapour. H229 Pressurised container: may burst if heated. H280 Contains gas under pressure; may explode if heated. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H411 Toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.