SAFETY DATA SHEET

ACETIC ANHYDRIDE

Compilation date: 14/01/2016

Revision No: 1

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

1.1. Product identifier

Product name: ACETIC ANHYDRIDE

CAS number: 108-24-7

EINECS number: 203-564-8

Index number: 607-008-00-9

Product code: GWN2241

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

Use of substance / mixture: Manufacture of substances. Laboratory chemicals.

1.3. Details of the supplier of the safety data sheet

Company name: Atom Scientific Ltd
Unit 2B East Tame Business Park
Rexcine Way
Hyde
Chesire
SK14 4GX
United Kingdom

Tel: +44 161 366 5123

Fax: +44 170 433 7167

Email: technical@atomscientific.com

1.4. Emergency telephone number

Emergency tel: +44 161 366 5123
(office hours only)

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Flam. Liq. 3: H226; Acute Tox. 2: H330; Acute Tox. 4: H302; Skin Corr. 1B: H314; STOT SE 3: H335; -: EUH071

Most important adverse effects: Flammable liquid and vapour. Fatal if inhaled. Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation. Corrosive to the respiratory tract.

2.2. Label elements

Label elements under CLP:

Hazard statements: H226: Flammable liquid and vapour.
H330: Fatal if inhaled.

[cont...]

H302: Harmful if swallowed.

H314: Causes severe skin burns and eye damage.

H335: May cause respiratory irritation.

EUH071: Corrosive to the respiratory tract.

Signal words: Danger

Hazard pictograms: GHS02: Flame

GHS05: Corrosion

GHS06: Skull and crossbones

Precautionary statements: P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P260: Do not breathe dust/fumes/gas/mist/vapours/spray.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P303+361+353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P308: IF exposed or concerned:

P310: Immediately call a POISON CENTER or doctor.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.1. Substances

Chemical identity: ACETIC ANHYDRIDE

CAS number: 108-24-7

EINECS number: 203-564-8

Contains: Molecular Formula: C4H6O3

Molecular Weight: 102.09 g/mol.

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water. Get medical attention immediately. Consult a doctor.

Eye contact: Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attenton immediately. Continue to rinse.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Wash out mouth with water. Consult a doctor.

[cont...]

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a doctor.

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

Skin contact: May be harmful if absorbed through the skin. Causes skin burns There may be redness or whiteness of the skin in the area of exposure. Irritation or pain may occur at the site of contact. Blistering may occur. Progressive ulceration will occur if treatment is not immediate.

Eye contact: Causes serious eye irritation The eyes may water profusely. The vision may become blurred. Corneal burns may occur.

Ingestion: Toxic if swallowed. Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Corrosive burns may appear around the lips. There may be vomiting. Nausea and stomach pain may occur.

Inhalation: Toxic if inhaled. May cause respiratory tract irritation. There may be irritation of the throat with a feeling of tightness in the chest. May cause drowsiness and dizziness. Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

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

Immediate / special treatment: Show this safety data sheet to the doctor in attendance. Eye bathing equipment should be available on the premises.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Water spray. Alcohol resistant foam. Dry chemical powder. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: Carbon oxides.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self contained breathing apparatus for fire fighting if required Wear protective clothing to prevent contact with skin and eyes. Use water spray to cool unopened containers.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Wear suitable respiratory protection if necessary. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Refer to section 8 of SDS for personal protection details.

[cont...]

6.2. Environmental precautions

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

6.4. Reference to other sections

Reference to other sections: For personal protection, see section 8. For waste disposal, see section 13.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Avoid contact with skin and eyes. Avoid breathing vapours, mist or gas. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Reacts violently with water. Storage Class (TRGS510):Flammable Liquids

7.3. Specific end use(s)

Specific end use(s): No other specific uses stipulated other than the uses mentioned in section 1.2.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Workplace exposure limits: **Respirable dust**

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	0.5ppm, 2.5mg/m3	2ppm, 10mg/m3	-	-

8.1. DNEL/PNEC Values

ACETIC ANHYDRIDE

Type	Exposure	Value	Population	Effect
DNEL	Inhalation	12.6 mg/m3	Workers	Local (Short-term)
DNEL	Inhalation	4.2 mg/m3	Workers	Systemic (Long-term)
DNEL	Inhalation	4.2 mg/m3	Workers	Local (Long-term)

[cont...]

PNEC	Fresh water	3.058 mg/l	-	-
PNEC	Marine water	0.3058 mg/l	-	-
PNEC	Periodical releases	30.58 mg/l	-	-
PNEC	Fresh water sediments	11.36 mg/kg dwt	-	-
PNEC	Marine sediments	1.136 mg/kg dwt	-	-
PNEC	Soil (agricultural)	0.47 mg/kg dwt	-	-
PNEC	Sewage treatment plant (STP)	115 mg/l	-	-

8.2. Exposure controls

Engineering measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air
respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with application laws and good laboratory practises. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Full contact - Material: butyl rubber. Minimum layer thickness: 0.3mm. Break through time: 8hrs. Splash contact - Material: Nature latex/chloroprene. Minimum layer thickenss: 0.6 mm. Break through time: 60 mins. If used in solution, or mixed with substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves.

Eye protection: Tightly fitting safety goggles. Face-shield. Use equipment for eye protection tested and approved under appropriate government standards.

Skin protection: Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Environmental: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Liquid

Colour: Colourless

[cont...]

Odour: Pungent

Solubility in water: Slightly soluble

Boiling point/range°C: 138-140

Melting point/range°C: -73

Flammability limits %: lower: 2.7

upper: 10.3

Flash point°C: 49

Part.coeff. n-octanol/water: log Pow: ca.-0.27

Autoflammability°C: 316

Vapour pressure: 5 hPa at 20C

Relative density: 1.08

9.2. Other information

Other information: No data available.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.

10.4. Conditions to avoid

Conditions to avoid: Heat. Flames. Sources of ignition. Do not allow water to enter container because of violent reaction

10.5. Incompatible materials

Materials to avoid: Acids. Alcohols. Bases. Oxidising agents. Reducing agents. Powdered metals.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes. In the event of fire: see section 5

Section 11: Toxicological information

11.1. Information on toxicological effects

Toxicity values:

Route	Species	Test	Value	Units
INHALATION	RAT	4H LC50	4,200	mg/m3
ORAL	RAT	LD50	630	mg/kg
DERMAL	RABBIT	LD50	4,320	mg/kg

[cont...]

Relevant hazards for substance:

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	ING	Based on test data
Acute toxicity (ac. tox. 2)	INH	Based on test data
Skin corrosion/irritation	DRM	Based on test data
Serious eye damage/irritation	OPT	Based on test data
STOT-single exposure	INH	Based on test data

Symptoms / routes of exposure

Skin contact: May be harmful if absorbed through the skin. Causes skin burns There may be redness or whiteness of the skin in the area of exposure. Irritation or pain may occur at the site of contact. Blistering may occur. Progressive ulceration will occur if treatment is not immediate.

Eye contact: Causes serious eye irritation The eyes may water profusely. The vision may become blurred. Corneal burns may occur.

Ingestion: Toxic if swallowed. Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Corrosive burns may appear around the lips. There may be vomiting. Nausea and stomach pain may occur.

Inhalation: Toxic if inhaled. May cause respiratory tract irritation. There may be irritation of the throat with a feeling of tightness in the chest. May cause drowsiness and dizziness. Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

Other information: RTECS: AK1925000. Burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin.

Section 12: Ecological information

12.1. Toxicity

Ecotoxicity values:

Species	Test	Value	Units
Daphnia magna (Water flea)	96H EC50	55	mg/l
Leuciscus idus melanotus	48H LC50	265	mg/l
Desmodesmus subspicatus (Green algae)	192H EC10	3,400	mg/l

12.2. Persistence and degradability

Persistence and degradability: Zahn-Wellens Test - Exposure Time 5 Days. Result: Readily Biodegradeable

[cont...]

12.3. Bioaccumulative potential

Bioaccumulative potential: No bioaccumulation potential.

12.4. Mobility in soil

Mobility: Soluble in water.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: No data available.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recycable solutions to a licensed disposal company.

Disposal of packaging: Dispose of as unused product.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

14.1. UN number

UN number: UN1715

14.2. UN proper shipping name

Shipping name: ACETIC ANHYDRIDE

14.3. Transport hazard class(es)

Transport class: 8 (3)

14.4. Packing group

Packing group: II

14.5. Environmental hazards

Environmentally hazardous: No **Marine pollutant:** No

14.6. Special precautions for user

Tunnel code: D/E

Transport category: 2

Section 15: Regulatory information

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

Specific regulations: This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

[cont...]

15.2. Chemical Safety Assessment

Chemical safety assessment: For this product a chemical safety assessment was not carried out.

Section 16: Other information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

Phrases used in s.2 and 3: EUH071: Corrosive to the respiratory tract.

H226: Flammable liquid and vapour.

H302: Harmful if swallowed.

H314: Causes severe skin burns and eye damage.

H330: Fatal if inhaled.

H335: May cause respiratory irritation.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.