Safety Data Sheet

Issue Date 01-Jun-2012 **Revision Date:** 31-Oct-2013 **Version** 1

1. IDENTIFICATION

Product Identifier

Product Name ARROW 1108 Low-VOC UNIVERSAL Solvent Cement for Plastic Pipe (PVC, CVPC, ABS)

Other means of identification

SDS # AAC-1108

UN/ID No UN1133
Product Code 1108, AA-1108

Recommended use of the chemical and restrictions on use

Recommended Use Multi-purpose Low-VOC solvent cement for plastic pipe (PVC, CVPC, ABS)

Details of the supplier of the safety data sheet

Supplier Address
Arrow Adhesives Company
5457 Spalding Dr.
Norcross, GA 30092

Emergency Telephone Number

Company Phone Number 1-800-678-9058
Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Clear to cloudy liquid **Physical State** Liquid **Odor** Ether-like

Classification

Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Flammable Liquids	Category 2

Hazards Not Otherwise Classified (HNOC)
May be harmful in contact with skin

Signal Word
Danger

Hazard Statements
Harmful if swallowed
Causes serious eye irritation
Suspected of causing cancer
May cause respiratory irritation
Highly flammable liquid and vapor

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear eye/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Precautionary Statements - Response
If exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
IN CASE OF FIRE: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

WHMIS Classification
Class B-Division 2 Class D-Division 2A Class D-Division 2B

Other Hazards
Harmful to aquatic life with long lasting effects
Unknown Acute Toxicity
5% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Tetrahydrofuran	109-99-9	Proprietary
Methyl ethyl ketone	78-93-3	Proprietary
Cyclohexanone	108-94-1	Proprietary
Acetone	67-64-1	Proprietary
CPVC Resin	68648-82-8	Proprietary

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact In case of irritation from airborne exposure, move to fresh air. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.

Skin Contact Take off contaminated clothing. Wash with soap and water. If symptoms persist, call a physician. Wash contaminated clothing before reuse.

Inhalation Remove to fresh air. If symptoms persist, call a physician. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion Rinse mouth. Seek medical attention. If drowsy or unconscious, do not give anything by mouth; place individual on the left side with head down. Do not induce vomiting.

Most important symptoms and effects

Symptoms Exposed individuals may experience eye tearing, redness, and discomfort. Prolonged or repeated skin contact may result in dermatitis (red, dry skin). May cause nose and throat irritation, with possible central nervous system effects. Long term overexposure may cause liver and kidney damage. May cause respiratory irritation. Fatigue and weakness. May cause drowsiness or dizziness.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically. Individuals with chronic respiratory, skin, kidney, or liver disorders may be at increased risk from exposure. May cause conjunctivitis with prolonged or repeated eye exposure.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Foam. Carbon dioxide (CO2). Dry chemical.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Highly flammable liquid and vapor. Class IB Flammable Liquid. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products Carbon oxides. Various hydrocarbon vapors and toxic gases.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Persons not wearing proper personal protective equipment should be excluded from area of spill.

Environmental Precautions Do not allow into any sewer, on the ground or into any body of water. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protection recommended in Section 8. Do not eat, drink or smoke when using this product. Avoid breathing vapors or mists. Ground/bond container and receiving equipment. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, solid) all hazard precautions given in the data sheet must be observed. Avoid prolonged contact with eyes, skin, and clothing. Wash face, hands, and any exposed skin thoroughly after handling. Use only outdoors or in a well-ventilated area.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Store containers upright. Store away from heat, sparks, flame.

Incompatible Materials Oxidizers. Acids. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Tetrahydrofuran 109-99-9	STEL: 100 ppm TWA: 50 ppm S*	TWA: 200 ppm TWA: 590 mg/m^3 (vacated) TWA: 200 ppm (vacated) TWA: 590 mg/m^3 (vacated) STEL: 250 ppm (vacated) STEL: 735 mg/m^3	IDLH: 2000 ppm TWA: 200 ppm TWA: 590 mg/m^3 STEL: 250 ppm STEL: 735 mg/m^3
Cyclohexanone 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m^3 (vacated) TWA: 25 ppm (vacated) TWA: 100 mg/m^3 (vacated) S*	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m^3

Methyl ethyl ketone 78-93-3	STEL: 300 ppm TWA: 200 ppm	TWA: 200 ppm TWA: 590 mg/m^3 (vacated) TWA: 200 ppm (vacated) TWA: 590 mg/m^3 (vacated) STEL: 300 ppm (vacated) STEL: 885 mg/m^3	IDLH: 3000 ppm TWA: 200 ppm TWA: 590 mg/m^3 STEL: 300 ppm STEL: 885 mg/m^3
Acetone 67-64-1	STEL: 750 ppm TWA: 500 ppm	TWA: 1000 ppm TWA: 2400 mg/m^3 (vacated) TWA: 750 ppm (vacated) TWA: 1800 mg/m^3 (vacated) STEL: 2400 mg/m^3 The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors (vacated) STEL: 1000 ppm	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m^3

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits. Ventilation systems. Showers. Eyewash stations.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Splash goggles or safety glasses.

Skin and Body Protection Rubber gloves. Use body protection appropriate for task.

Respiratory Protection Not required under normal conditions. If recommended levels are exceeded, respiratory protection must be selected to assure compliance with OSHA Standard 29CFR 1910.134.

General Hygiene Considerations Do not eat, drink or smoke when using this product. Wash face, hands and any exposed skin thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid		
Appearance	Clear to cloudy liquid	**Odor**	Ether-like
Color	Clear to hazy	**Odor Threshold**	Not determined

Property	**Values**	**Remarks • Method**
pH	Not available	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	66 °C / 151 °F	
Flash Point	-14 °C / 6 °F	
Evaporation Rate	8.0	(butyl acetate = 1)
Flammability (Solid, Gas)	n/a-liquid	
Upper Flammability Limits	11.8%	
Lower Flammability Limit	1.8%	
Vapour Pressure	143 mm Hg	@ 20°C (68°F)
Vapor Density	2.5	(Air=1)
Specific Gravity	0.91	
Water Solubility	Negligible	

Solubility in other solvents	Not determined
Partition Coefficient	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined
VOC Content	Maximum VOC emissions when applied and tested per SCAQMD Rule 1168, Test Method 316A is <= 490 g/L

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
Avoid heat, sparks, open flames and other ignition sources.

Incompatible Materials
Oxidizers. Acids. Bases.

Hazardous Decomposition Products
Carbon oxides. Hydrogen chloride. Other various hydrocarbons.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes serious eye irritation.

Skin Contact May be harmful in contact with skin.

Inhalation Avoid breathing vapors or mists.

Ingestion Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Tetrahydrofuran 109-99-9	= 1650 mg/kg (Rat)	-	= 53.9 mg/L (Rat) 4 h = 180 mg/L (Rat) 1 h
Cyclohexanone 108-94-1	= 800 mg/kg (Rat)	= 948 mg/kg (Rabbit)	= 10.7 mg/L (Rat) 4 h = 8000 ppm (Rat) 4 h
Methyl ethyl ketone 78-93-3	= 2737 mg/kg (Rat)	= 6480 mg/kg (Rabbit)	-
Acetone 67-64-1	= 5800 mg/kg (Rat)	-	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

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

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been tested.

Chemical Name	ACGIH	IARC	NTP	OSHA
Tetrahydrofuran 109-99-9	A3			
Cyclohexanone 108-94-1	A3	Group 3		

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 3 IARC components are "not classifiable as human carcinogens"

STOT - single exposure May cause respiratory irritation.

Numerical measures of toxicity

Not determined

Unknown Acute Toxicity 5% of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Tetrahydrofuran 109-99-9		1970 - 2360: 96 h Pimephales promelas mg/L LC50 flow-through 2700 - 3600: 96 h Pimephales promelas mg/L LC50 static		5930: 24 h Daphnia magna mg/L EC50
Cyclohexanone 108-94-1	20: 96 h Chlorella vulgaris mg/L EC50	481 - 578: 96 h Pimephales promelas mg/L LC50 flow-through 8.9: 96 h Pimephales promelas mg/L LC50	EC50 = 18.5 mg/L 5 min EC50 = 21.3 mg/L 10 min EC50 = 25 mg/L 5 min	800: 24 h Daphnia magna mg/L EC50
Methyl ethyl ketone 78-93-3		3130 - 3320: 96 h Pimephales promelas mg/L LC50 flow-through	EC50 = 3403 mg/L 30 min EC50 = 3426 mg/L 5 min	520: 48 h Daphnia magna mg/L EC50 5091: 48 h Daphnia magna mg/L EC50 4025 - 6440: 48 h Daphnia magna mg/L EC50 Static
Acetone 67-64-1		4.74 - 6.33: 96 h Oncorhynchus mykiss mL/L LC50 6210 - 8120: 96 h Pimephales promelas mg/L LC50 static 8300: 96 h Lepomis macrochirus mg/L LC50	EC50 = 14500 mg/L 15 min	10294 - 17704: 48 h Daphnia magna mg/L EC50 Static 12600 - 12700: 48 h Daphnia magna mg/L EC50

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Tetrahydrofuran 109-99-9	0.45
Methyl ethyl ketone 78-93-3	0.29
Cyclohexanone 108-94-1	0.86
Acetone 67-64-1	-0.24

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

US EPA Waste Number

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Tetrahydrofuran 109-99-9				U213
Cyclohexanone 108-94-1		Included in waste stream: F039		U057
Methyl ethyl ketone 78-93-3	U159	Included in waste streams: F005, F039	200.0 mg/L regulatory level	U159
Acetone 67-64-1		Included in waste stream: F039		U002

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Tetrahydrofuran 109-99-9	Toxic Ignitable
Methyl ethyl ketone 78-93-3	Toxic Ignitable
Acetone 67-64-1	Ignitable

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances. Shipments of containers holding 1 liter or less in volume may qualify for a "Limited Quantity" exception. Refer to 49 CFR 173.150 for additional information.

DOT

UN/ID No UN1133
Proper Shipping Name Adhesives
Hazard Class 3
Packing Group II

IATA

UN/ID No	UN1133
Proper Shipping Name	Adhesives
Hazard Class	3
Packing Group	II

IMDG

UN/ID No	UN1133
Proper Shipping Name	Adhesives
Hazard Class	3
Packing Group	II
Marine Pollutant	This material may meet the definition of a marine pollutant

15. REGULATORY INFORMATION

International Inventories

TSCA	Listed

Legend:

TSCA *- United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL *- Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS *- Japan Existing and New Chemical Substances*

IECSC *- China Inventory of Existing Chemical Substances*

KECL *- Korean Existing and Evaluated Chemical Substances*

PICCS *- Philippines Inventory of Chemicals and Chemical Substances*

US Federal Regulations

CERCLA

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Tetrahydrofuran 109-99-9	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Methyl ethyl ketone 78-93-3	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Cyclohexanone 108-94-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Acetone 67-64-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

SARA 313

Not determined

US State Regulations

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Tetrahydrofuran 109-99-9	X	X	X
Cyclohexanone 108-94-1	X	X	X
Methyl ethyl ketone 78-93-3	X	X	X
Acetone 67-64-1	X	X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	2	3	1	None
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	2	3	1	G

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

End of Safety Data Sheet