

Safety Data Sheet

Issue Date 01-Jun-2010 Revision Date: 02-Oct-2013

1. IDENTIFICATION

Product Identifier

Product Name ARROW 1132 POOL & TURF Low-VOC Solvent Cement for PVC Plastic Pipe

Other means of identification

SDS # AAC-1132

UN/ID No UN1133 Product Code 1132, AA-1132

Recommended use of the chemical and restrictions on use

Recommended Use Low-VOC solvent cement for PVC plastic pipe

Details of the supplier of the safety data sheet

Manufacturer 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 1-800-535-5053 (North America) 1-352-323-3500 (International)

2. HAZARDS IDENTIFICATION

Appearance Blue Liquid Physical State Liquid Odor Ether-like

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	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 Harmful if inhaled Causes serious eye irritation

May cause respiratory irritation. May cause drowsiness or dizziness

Highly flammable liquid and vapor



Precautionary Statements - Prevention

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 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 Wear protective gloves/protective clothing/eye protection/face protection 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

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 in a well-ventilated place. Keep container tightly closed Store locked up Keep cool

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

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
PVC Resin	9002-86-2	Proprietary

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

4. FIRST-AID MEASURES

First Aid Measures

General Advice If exposed or concerned: Get medical advice/attention.

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

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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. Seek immediate medical attention/advice.

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. Fatigue and weakness. May cause drowsiness or dizziness. Long term overexposure may cause liver and kidney damage.

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.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Foam. Carbon dioxide (CO2). Dry chemical.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

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

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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.

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.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Wash thoroughly after handling. Use personal protection recommended in Section 8. Do

not eat, drink or smoke when using this product. Avoid breathing vapors or mists. Use only in well-ventilated areas. 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. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. 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	STEL: 100 ppm	TWA: 200 ppm	IDLH: 2000 ppm
109-99-9	TWA: 50 ppm	TWA: 590 mg/m ³	TWA: 200 ppm
	S*	(vacated) TWA: 200 ppm	TWA: 590 mg/m ³
		(vacated) TWA: 590 mg/m ³	STEL: 250 ppm
		(vacated) STEL: 250 ppm	STEL: 735 mg/m ³
		(vacated) STEL: 735 mg/m ³	_
Acetone	STEL: 750 ppm	TWA: 1000 ppm	IDLH: 2500 ppm
67-64-1	TWA: 500 ppm	TWA: 2400 mg/m ³	TWA: 250 ppm
		(vacated) TWA: 750 ppm	TWA: 590 mg/m ³
		(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	

Methyl ethyl ketone 78-93-3	STEL: 300 ppm TWA: 200 ppm	TWA: 200 ppm TWA: 590 mg/m³ (vacated) TWA: 200 ppm (vacated) TWA: 590 mg/m³ (vacated) STEL: 300 ppm	IDLH: 3000 ppm TWA: 200 ppm TWA: 590 mg/m ³ STEL: 300 ppm STEL: 885 mg/m ³
		(vacated) STEL: 885 mg/m ³	31LL. 865 Hig/III
Cyclohexanone 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	TWA: 50 ppm TWA: 200 mg/m³ (vacated) TWA: 25 ppm (vacated) TWA: 100 mg/m³ (vacated) S*	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m³
PVC Resin 9002-86-2	TWA: 1 mg/m ³ respirable fraction	-	-

Appropriate engineering controls

Apply technical measures to comply with the occupational exposure limits. Ventilation **Engineering Controls**

systems. Eyewash stations. Showers. Mechanical exhaust (explosion proof) may be

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required.

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 Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State Liquid **Appearance** Liquid

Odor Ether-like Color Blue **Odor Threshold** 0.88 ppm

Values Remarks • Method **Property**

Melting Point/Freezing Point

Not available -108 °C / -163 °F

Flash Point

56 °C / 133 °F -20 °C / -4 °F

Evaporation Rate

> 1.0

Flammability (Solid, Gas)

n/a-liquid

Upper Flammability Limits

Boiling Point/Boiling Range

12.8%

Lower Flammability Limit Vapour Pressure

1.8%

@ 20°C (68°F) 190 mm Hg 2.5 (Air=1)

Vapor Density Specific Gravity

0.910 Negligible

Water Solubility Solubility in other solvents

Not determined

Partition Coefficient

Not determined

Auto-ignition Temperature Decomposition Temperature 321 °C / 610 °F Not determined

Not determined

(butyl acetate = 1)

Kinematic Viscosity Dynamic Viscosity Explosive Properties Oxidizing Properties

Not determined Not determined Not determined

Not determined

VOC Content Maximum VOC emissions when applied and tested per SCAQMD Rule 1168, Test Method

316A is <= 510 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 Harmful if inhaled.

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
Acetone 67-64-1	= 5800 mg/kg (Rat)	-	-
Methyl ethyl ketone 78-93-3	= 2737 mg/kg (Rat)	= 6480 mg/kg (Rabbit)	-
Cyclohexanone 108-94-1	= 800 mg/kg (Rat)	= 948 mg/kg (Rabbit)	= 10.7 mg/L (Rat) 4 h = 8000 ppm (Rat) 4 h

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.

ARROW 1132 Low-VOC PVC Cement

Chemical Name	ACGIH	IARC	NTP	OSHA
Tetrahydrofuran	A3			
109-99-9				
Cyclohexanone	A3	Group 3		
108-94-1				
PVC Resin		Group 3		
9002-86-2		,		

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. May cause drowsiness or dizziness.

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Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

Category IV

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
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
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
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

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	-0.24
67-64-1	

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				U213
109-99-9				
Acetone		Included in waste stream:		U002
67-64-1		F039		
Methyl ethyl ketone	U159	Included in waste streams:	200.0 mg/L regulatory level	U159
78-93-3		F005, F039		
Cyclohexanone		Included in waste stream:		U057
108-94-1		F039		

California Hazardous Waste Status

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

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 5 Liters or less per inner packaging 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 ||

IATA

UN/ID No UN1133

Proper Shipping Name Adhesives

Hazard Class 3
Packing Group ||

IMDG

UN/ID No UN1133
Proper Shipping Name Adhesives

Hazard Class 3
Packing Group II
Marine Pollutant No

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	1000 lb		RQ 1000 lb final RQ
109-99-9			RQ 454 kg final RQ
Methyl ethyl ketone	5000 lb		RQ 5000 lb final RQ
78-93-3			RQ 2270 kg final RQ
Cyclohexanone	5000 lb		RQ 5000 lb final RQ
108-94-1			RQ 2270 kg final RQ
Acetone	5000 lb		RQ 5000 lb final RQ
67-64-1			RQ 2270 kg final RQ

SARA 313

Not determined

US State Regulations

California Proposition 65

This product may contain trace levels of chemicals known to the State of California to cause cancer. Exposure to these chemicals above the State of California 'No Significant Risk Level' is unlikely under normal use conditions.

U.S. State Right-to-Know Regulations

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

PVC Resin	X	
9002-86-2		

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