

Full Range of Quality HCFCs, HFCs, HCs, HFOs and Natural Refrigerants available at A-Gas

- R123
- HFO 1233zd
- HFO 1234yf
- HFO 1234ze
- R1270
- R134a
- R170
- R22, R23
- R290, R32
- R402A
- R402B
- R403B
- R404A
- R406A
- R407A
- R407C
- R407F
- R408A
- R409A
- R410A
- R417A
- R448A
- R449A
- R452A
- R507
- R508A
- R508B
- R600a
- R744

Isceon M089  
Other refrigerants are available on request

## A-Flush+ is Next-Generation 'Green' Circuit Flushing Solution

CIRCUIT flushing is a critical maintenance procedure that removes contamination or dirt from an air-conditioning or refrigeration system. Flushing the system clear of all acids and soot, for example, ensures longer compressor life and reliable performance.

Circuit flushing involves the cleaning of pipes, evaporators and condensers of an air-conditioning or refrigerant system by means of a solvent. The procedure is usually required in the event of a compressor failure due to electrical burnout or mechanical breakdown. The end result is mechanical debris, carbon soot and acid formation. If these impurities are not removed, it can result in the failure of the replacement compressor as well.

The same result is possible in the event of moisture or dirt ingress into an air-conditioning or refrigerant system. In addition, preventative circuit flushing is considered best practice in terms of proactive maintenance, which involves either retrofitting or changing the refrigerant and oil.

Current industry practice in terms of circuit flushing includes purging with high-pressure nitrogen. While this is a cheap and therefore cost-effective method, it can only push mechanical debris due to pressure; it cannot dissolve and flush oil and acids. Flushing with refrigerant is not recommended, due to the possibility of it being emitted into the atmosphere and thereby damaging the environment.

It is illegal to release refrigerant into the atmosphere as per SANS 10147 and Government Gazette No. 37621 (8 May 2014). In addition, as from 1 January 2016, it is prohibited to import R141b (or HCFC-141b) "either in pure form or as a component of blended chemicals, for the purpose of placing on the market or use in the production of polyurethane foams or as solvents or any other application."

Therefore A-Gas South Africa has introduced the latest-generation circuit flushing solution in order to allow the local refrigerant industry to comply with the necessary legislation. *A-Flush+*, based on environment-friendly  $C_3H_2ClF_3$  and nitrogen as the propellant, is not only highly effective and non-flammable, but has a low Global Warming Potential (GWP), A-Gas South Africa National Sales Manager Michael Labacher explains. *A-Flush+* is suitable for electronics, metal, medical and precision cleaning applications. It can also be used in vapour degreasing equipment and cold cleaning, and can even be dispensed in aerosol cans.

"The main advantage of *A-Flush+* is its favourable environmental properties, specifically negligible ozone depletion and a GWP of 1," Labacher points out. These exceptional 'green' characteristics, combined with good solvency due to a high heat of vaporisation, means that the new flushing solution is an excellent choice for a wide array of applications. *A-Flush+* is compatible with diverse materials including stainless steel, cold-rolled steel, galvanised steel, copper, iron and aluminium.

The product is used to flush and clean the components of air-conditioning and refrigeration circuits, including transportation applications such as cars, trucks, buses and even trains, aerospace applications such as aeroplanes and helicopters, residential and commercial applications, commercial refrigeration applications, and process chillers. In addition, *A-Flush+* is an effective cleaning solvent for many common oils and lubricants including mineral oils, refrigerant oils, vacuum oils, fluorinated oils, heavy grease, cutting oils, silicone oils and silicone grease.

*A-Flush+* remains a liquid for an extended period of time, even at room temperature. Its vapour pressure facilitates quick evaporation

and drying of cleaned materials. The low surface tension results in good wetting of parts to be cleaned, allowing for rapid cleaning of intricate pieces and parts with small channels.

A-Flush+ versus R141b		
	A-Flush+	HCFC 141b
Composition	Pure product	Pure product
Boiling Point	19°C	32°C
Liquid Density	1.26 g/cm <sup>3</sup>	1.24 g/cm <sup>3</sup>
Flash Point	None	None
Vapour Flame Limits	None	Yes
GWP	1	782
ODP	None	Yes
Cleaning Performance		
POE	Optimal	Optimal
Mineral Oils	Optimal	Optimal
PAG	Optimal	Optimal

"A key consideration of any flushing solution is the impact on the surrounding area and the safety of all individuals who come into physical contact with it," Labacher notes. In particular, the ultra-low Maximum Incremental Reactivity (MIR) means that *A-Flush+* generates less ground-level ozone or smog than methane. Another major benefit is that it is totally non-flammable, as it does not have a flash point or vapour flame limits up to 100°C, the highest temperature tested.

The new flushing solution is highly effective for aliphatic and fluorinated soils, in addition to silicon and glycol. It is also compatible with a large number of commonly-used plastics and elastomers. *A-Flush+* can be recovered or recycled by simple flash distillation, or by means of carbon absorption with steam desorption. There is no issue related to vapour recovery, since *A-Flush+* is a pure component and does not require a stabiliser as it is hydrolytically stable.

A-Gas South Africa's primary focus is providing total solutions to its diverse markets. Celebrating its 22nd anniversary this year, the company is a global leader in the supply and lifecycle management of refrigerant and service gases to the heating, ventilation, air-conditioning and refrigeration industries.

### New Improved Formulation

# A-FLUSH<sup>+</sup>

CLEANING SOLUTION

now available at

## METRACLARK

