R-Clean Heat Transfer System Cleaner

Material Safety Data Sheet (MSDS)

OSHA HazCom Standard 29 CFR 1910.1200(g), Rev. 2012 and GHS Rev 03.

1. Identification

Product identifier	R-Clean
Trade name	PAG Heat Transfer System Cleaner
Product description	
Details of the supplier of the safety data sheet	
Manufacturer/supplier	Relatherm Heat Transfer Fluids P.O.Box 57874, Jacksonville, FL, 32241
Emergency telephone number	904-300-0911

2. Hazard(s) Identification

Classification of the substance or mixture

GHS08

Label elements

GHS label elements	The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms	GHS08
Signal word	Danger
Hazard statements	May be fatal if swallowed and enters airways

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2. Hazard(s) Identification (continued)

Precautionary statements

Wear protective gloves.
Wear eye protection / face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If swallowed: Call a poison center/doctor if you feel unwell.
Specific treatment (see on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Rinse mouth.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Dispose of contents/container in accordance with local/regional/national/ international regulations.

Classification system NFPA ratings (scale 0-4)

Health=0; Fire=1; Reactivity=0

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3. Composition / Information on Ingredients

Chemical characterization: Mixtures

Dangerous Components None

Component Name	Identification	Classification according to GHS	%
Polyalkylene Glycol	CAS #: 9003-13-8	Not Classified	40-60%
Ester	CAS #: 26761-40-0	Not Classified	10-20%
Hydrocarbon	CAS#: 64742-54-7	Not Classified	5-15%
Proprietary Additives	Trade Secret	Not Classified	1-5%

4. First-aid Measures

	Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Description of first aid measures	In case of unconsciousness, place patient securely on side position for transportation.
General information	Immediately wash with water and soap and rinse thoroughly. If irritation occurs consult a doctor.
After inhalation	Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
After skin contact	
After eye contact	
After swallowing	Immediately call a doctor.
Most important symptoms and effects, both acute and delayed	No further relevant information available.
Indication of any immediate medical attention and special treatment needed	No further relevant information available.

5. Fire-fighting Measures

Extinguishing media	
Suitable extinguishing agents	CO_2 or Powder. Water mist to cool, no direct water spray. Collect spillage.
Special hazards arising from the substance or mixture	No further relevant information available.
Advice for firefighters	
Protective equipment	As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Not required
Environmental precautions	Do not allow to enter sewers/ surface or ground water
Methods and material for containment and cleaning up	Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to section 13. Ensure adequate ventilation. Dispose of the collected material according to regulations.
Reference to other sections	See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and Storage

Precautions for safe handling	Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols.
Information about protection against explosions and fires	No special measures required
Conditions for safe storage, including any incompatibilities	Storage
Requirements to be met by storerooms and receptacles:	No special requirements
Further information about storage conditions	Keep receptacle tightly sealed
Specific end use(s)	No further relevant information available

8. Exposure Controls / Personal Protection

Additional information about design of technical systems	No further data; see section 7
Control parameters	
Components with occupational exposure limits	The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
Additional information	The lists that were valid during the creation were used as basis.
Exposure controls	
Personal protective equipment	
General protective and hygienic measures	Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.
Breathing equipment	Not required
Protection of hands	Protective gloves The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Select glove material based on penetration times, rates of diffusion and degradation.
Material of gloves	The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material	The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.
Eye protection	Tightly sealed goggles

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9. Physical and Chemical Properties

Ethylene Glycol Monobutyl Ether	5-20%
Information on basic physical and chemical properties	
General Information	
Appearance	
Form	Liquid
Color	Clear
Odor	Typical
Odor Threshold	Not determined
pH-value	Not determined
Change in Condition	
Melting Point/Melting Range	Not applicable
Boiling Point/Boiling Range	>500°F (>260°C)
Flash Point	>170°F (>70°C)
Flammability (solids/gases)	Not applicable
Ignition Temperature	
Decomposition Temperature	Not determined
Auto-Ignition	Not determined
Danger of explosion	Not determined
Explosion Limits	
Lower	Not determined
Upper	Not determined
Vapor Pressure @ 20°C	Not determined
Evaporation Rate	Not determined
Solubility In/Miscibility with Water	Not Miscible
Partition coefficient (n-octanol/water)	Not determined
Viscosity	
Viscosity - Dynamic	13.1 cps
Viscosity - Kinematic	15 cSt
Solvent Content	
Organic Solvents	0.00%
Other Information	No further information

10. Stability and Reactivity

Reactivity	No further relevant information available
Chemical stability	Stable under normal conditions
Thermal decomposition / conditions to be avoided	No decomposition if used according to specifications to
Possibility of hazardous reactions	No dangerous reactions known
Conditions to avoid	No further relevant information available
Incompatible materials	No further relevant information available
Hazardous decomposition products	No dangerous decomposition products known

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Primary irritant effect:

On the skin	Irritant to skin and mucous membranes
On the eye	Irritating effect. Causes serious eye irritation
Additional toxicological information	The product shows the following dangers according to internally approved calculation methods for preparations: Harmful. Irritant.

Carcinogenic categories

IARC (International Agency for Research on Cancer)	None of the ingredients are listed. Group 1 - Carcinogenic to humans Group 2A - Probably carcinogenic to humans Group 2B - Possibly carcinogenic to humans Group 3 - Not classifiable as to its carcinogenicity to humans Group 4 - Probably not carcinogenic to humans
NTP (National Toxicology Program)	None of the ingredients are listed
OSHA-Ca (Occupational Safety & Health Administration)	None of the ingredients are listed

12. Ecological Information

Toxicity	No data is available on this product.
Aquatic toxicity	No further relevant information available
Persistence and degradability	No further relevant information available
Bioaccumulative potential	No further relevant information available
Mobility in soil	No further relevant information available
Additional ecological information	
General notes	Water hazard class 1 (Self-assessment): slightly hazardous for water

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12. Ecological Information (continued)

Results of PBT and vPvB assessment

PBT	Not applicable
vPvB	Not applicable
Other adverse effects	No further relevant information available

13. Disposal Considerations

Uncleaned packagings

Recommendation	Disposal must be made according to official regulations.

14. Transportation Information

UN-Number

DOT, ADR, ADN, IMDG, IATA	Non-regulated material

UN proper shipping name

DOT, ADR, ADN, IMDG, IATA	Non-regulated material

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class	Non-regulated material

Packing group

DOT, ADR, IMDG, IATA	Non-regulated material

Environmental hazards

Marine pollutant	No
Special precautions for user	Not applicable
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
UN “Model Regulation”	—

15. Regulatory Information

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

Section 355 (extremely hazardous substances)	None of the ingredients are listed
Section 313 (Specific toxic chemical listings)	None of the ingredients are listed
TSCA (Toxic Substances Control Act)	All components are included

Proposition 65

Chemicals known to cause cancer	None of the ingredients are listed

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15. Regulatory Information

Chemicals known to cause reproductive toxicity for females	None of the ingredients are listed
Chemicals known to cause reproductive toxicity for males	None of the ingredients are listed
Chemicals known to cause developmental toxicit	None of the ingredients are listed
Carcinogenic categories	
EPA (Environmental Protection Agency)	None of the ingredients are listed
TLV (Threshold Limit Value established by ACGIH)	None of the ingredients are listed
NIOSH-Ca (National Institute for Occupational Safety and Health)	None of the ingredients are listed
GHS label elements	Non-regulated material
Hazard pictograms	GHS08
Signal word	Danger
Hazard-determining components of labeling	Hydrocarbon, <22 cSt
Hazard statements	Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.
Precautionary statements	Wear protective gloves. Wear eye protection / face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If swallowed: Call a poison center/doctor if you feel unwell. Specific treatment (see on this label). If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Rinse mouth. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. Dispose of contents/container in accordance with local/regional/national/ international regulations.
National regulations	The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.
State Right to Know	Hydrocarbon, <22 cSt 72623-86-0 Asp Hazard 1-H304
Chemical safety assessment	A chemical safety assessment has not been carried out

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16. Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

Date of preparation / last revision	02/19/2016 / 1
Abbreviations and acronyms	ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) ADN: The European Agreement concerning the International Carriage of Danger- ous Goods by Inland Waterways IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association ACGIH: American Conference of Governmental Industrial Hygienists EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent Acute Tox. 4: Acute toxicity, Hazard Category 4 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2 Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A