A NEW FORCE IN CHEMICAL MANUFACTURING

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SAFETY DATA SHEET

ISSUED SEPTEMBER 2014 (VALID 5 YEARS FROM DATE OF ISSUE)

R42 MOLYTACK GREASE

SECTION 1 - IDENTIFICATION OF THE MATERIAL

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PRODUCT NAME	Molytack Grease
PRODUCT TYPE	Impactor 2 Grease
PART NUMBER	CT-R42
AVAILABLE SIZES	450g (CT-R42-450G)
	1KG (CT-R42-1KG)
	4KG (CT-R42-4KG)
	20KG (CT-R42-20KG)

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	CAS #	%	TWA HSIS	STEL HSIS
Naphtha distillate, heavy, solvent refined (severe)	64741-96-4	30-50		
Residual oils, petroleum, solvent dewaxed	64742-62-7	30-50		
Lithium complex thinkener proprietary	Not available	7-13		
Calcium carbonate	471-34-1	3-7		
Molybdenum disulphide	1317-33-5	1-5		
Zinc dialkyl dithiophosphate	68649-42-3	1-2		
Additive non-hazardous proprietary	Not available	<0.5		

SECTION 3 - HAZARDS IDENTIFICATION

NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	
Toxicity	0	
Body Contact	1	
Reactivity	1	
Chronic	0	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Poisons Schedule: Not Applicable
GHS Classification: Not Applicable

Label Elements
GHS Elements: Not Applicable
Signal Word: Not Applicable

Hazard statement (s): Not Applicable
Precautionary Statement(s): Prevention
Not Applicable
Precautionary Statement (s): Response
Not Applicable
Precautionary Statement(s): Storage
Not Applicable
Precautionary Statement(s): Disposal
Not Applicable

SECTION 4 - FIRST AID MEASURES

Description of first aid measures

Eye Contact
If this product comes in contact with eyes:
Wash out immediately with water.
If irritation continues, seek medical attention.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact
If skin contact occurs:
Immediately remove all contaminated clothing, including footwear.
Flush skin and hair with running water (and soap if available).
Seek medical attention in event of irritation.
If failure/misuse of high pressure/hydraulic equipment results in injection of grease/oil through the skin seek
Urgent medical attention. Treat as surgical emergency.

Inhalation
If fumes, aerosols or combustion products are inhaled remove from contaminated area.
Other measures are usually unnecessary.

Ingestion
If swallowed do **NOT** induce vomiting.
If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain
open airway and prevent aspiration.
Observe the patient carefully.
Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.

Seek medical advice.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Heavy and persistent skin contamination over many years may lead to dysplastic changes. Pre-existing skin disorders may be aggravated by exposure to this product.

In general, emesis induction is unnecessary with high viscosity, low volatility products, i.e. most oils and greases.

High pressure accidental injection through the skin should be assessed for possible incision, irrigation and/or debridement.

NOTE: Injuries may not seem serious at first, but within a few hours tissue may become swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Product may be forced through considerable distances along tissue planes.

SECTION 5 - FIRE FIGHTING MEASURES

Extinguishing media

Foam.
Dry chemical powder.
BCF (where regulations permit).
Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting

Alert Fire Brigade and tell them location and nature of hazard.
Wear breathing apparatus plus protective gloves.
Prevent, by any means available, spillage from entering drains or water course.
Use water delivered as a fine spray to control fire and cool adjacent area.

Fire/Explosion Hazard

Combustible.
Slight fire hazard when exposed to heat or flame.
Heating may cause expansion or decomposition leading to violent rupture of containers.
On combustion, may emit toxic fumes of carbon monoxide (CO).

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills

Slippery when spilt.
Clean up all spills immediately.
Avoid contact with skin and eyes.
Wear impervious gloves and safety goggles.

Major Spills

Slippery when spilt.
Remove all ignition sources.
Minor hazard.
Clear area of personnel.
Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling

Safe handling

Remove all ignition sources.
Limit all unnecessary personal contact.

Wear protective clothing when risk of exposure occurs.
Use in a well-ventilated area.

Other information

Store in original containers.
Keep containers securely sealed.
No smoking, naked lights or ignition sources.
Store in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities

Suitable container

Metal can or drum
Packaging as recommended by manufacturer.
Check all containers are clearly labelled and free from leaks.

Storage incompatibility

Avoid storage with oxidisers

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Occupational Exposure Limits (OEL)

Ingredient Data

Source	Ingredient	Material Name	TWA	STEL	Peak	Notes
Austrialia Exposure Standards	Calcium carbonate	Calcium carbonate	10mg/m^3	Not available	Not available	This value is for inspirable dust containing no asbestos and <1% crystalline silica (Chap 14)
Australia Exposure Standards	Molybdenum disulphide	Fume (thermally generated) (respirable dust)	2mg/m^3	Not available	Not available	(see silicia – Amorphous); containing no asbestos and <1% crystalline silica (chap 14)
Australia Exposure Standards	Molybdenum disulphide	Molybdenum insoluble compounds (as Mo)	10mg/m^3	Not available	Not available	Not available

Emergency Limits

Ingredient	TEEL-0	TEEEL-1	TEEL-2	TEEL-3
Calcium carbonate	15ppm	45/30ppm	500/75ppm	350/500ppm
Molybdenum disulphide	16.7ppm	50.1ppm	83.4ppm	500ppm

Ingredient	Original IDLH	Revised IDLH
Naphthenic distillate heavy, solvent-refined (severe)	Not available	Not available
Residual oils, petroleum, solvent dewaxed	Not available	Not available
Lithium complex thickener proprietary	Not available	Not available
Calcium carbonate	Not available	Not available
Molybdenum disulphide	N.E mg/m^3 / N.E ppm	5000mg/m^3
Zinc dialkyl dithiophosphate	Not available	Not available
Additive non-hazardous proprietary	Not available	Not available

Exposure Controls

Appropriate engineering controls:

General exhaust is adequate under normal operating conditions

Personal Protection:

Eye and face protection

Safety glasses with side shields
Chemical goggles.
Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.

Skin protection See Hand protection below

Hands/feet protection

Wear chemical protective gloves, e.g. PVC.
Wear safety footwear or safety gumboots, e.g. Rubber

Body protection See Other protection below

Other protection

Overalls.
P.V.C. apron.
Barrier cream.

Thermal hazards Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the: **"Forsberg Clothing Performance Index".**
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:

Molytak Grease Not Available

Material	CPI

* CPI - Chemwatch Performance Index

A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent) Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required minimum protection factor	Half face respirator	Full face respirator	Powered air respirator
Up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
Up to 50 x ES	-	A-AUS / Class 1 P2	-
Up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Black semi-solid with mild petroleum odour; does not mix with water.		
Physical state	Non Slump Paste	**Relative density (Water = 1)**	Not Available
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	Not Available	**Taste**	Not Available
Evaporation rate	Not Applicable	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Applicable
Vapour pressure (kPa)	Negligible	**Gas group**	Not Available
Solubility in water (g/L)	Immiscible	**pH as a solution(1%)**	Not Applicable
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 - STABILITY AND REACTIVITY

Reactivity See section 7

Chemical stability

· Unstable in the presence of incompatible materials.
· Product is considered stable.
· Hazardous polymerisation will not occur.

Possibility of hazardous reactions

See section 7

Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Not normally a hazard due to non-volatile nature of product Inhalation of oil droplets/ aerosols may cause discomfort and may produce chemical pneumonitis.
Ingestion	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health).
Skin Contact	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
Eye	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Principal route of exposure is by skin contact; lesser exposures include inhalation of fumes from hot oils, oil mists or droplets. Prolonged contact with mineral oils carries with it the risk of skin conditions such as oil folliculitis, eczematous dermatitis, pigmentation of the face (melanosis) and warts on the sole of the foot (plantar warts). With highly refined mineral oils no appreciable systemic effects appear to result through skin absorption. Exposure to oil mists frequently elicits respiratory conditions, such as asthma; the provoking agent is probably an additive.

Molytak Grease

TOXICITY	IRRITATION
Not Available	Not Available

naphthenic distillate, heavy, solvent-refined (severe)

TOXICITY	IRRITATION
Not Available	Not Available

residual oils, petroleum, solvent dewaxed

TOXICITY	IRRITATION
Not Available	Not Available

calcium carbonate

TOXICITY	IRRITATION
Oral (Rat) LD50: 6450 mg/kg	Eye (rabbit): 0.75 mg/24h - SEVERE Skin (rabbit): 500 mg/24h-moderate

Not Available	Not Available

molybdenum disulfide

TOXICITY	IRRITATION
Not Available	Not Available

zinc dialkyl dithiophosphate

TOXICITY	IRRITATION
	Eye (human):SEVERE [Manufacturer]
Not Available	Not Available

NAPHTHENIC DISTILLATE, HEAVY, SOLVENT-REFINED (SEVERE)

No significant acute toxicological data identified in literature search.
The materials included in the Lubricating Base Oils category are related from both process and physicalchemical perspectives; The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since: The adverse effects of these materials are associated with undesirable components, and the levels of the undesirable components are inversely related to the degree of processing; Distillate base oils receiving the same degree or extent of processing will have similar toxicities; the potential toxicity of *residual base oils* is independent of the degree of processing the oil receives.
The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing.Unrefined & mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential carcinogenic and mutagenic activities.

RESIDUAL OILS, PETROLEUM, SOLVENT DEWAXED

The materials included in the Lubricating Base Oils category are related from both process and physicalchemical perspectives; the potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since: the adverse effects of these materials are associated with undesirable components, and the levels of the undesirable components are inversely related to the degree of processing; Distillate base oils receiving the same degree or extent of processing will have similar toxicities; the potential toxicity of *residual base oils* is independent of the degree of processing the oil receives. The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing.
Unrefined & mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential carcinogenic and mutagenic activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components.

CALCIUM CARBONATE

No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects.

ZINC DIALKYL DITHIOPHOSPHATE

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. For dithiophosphate alkyl esters and their (zinc) salts:
Acute toxicity: Dithiophosphate alkyl esters consist of a phosphorodithioic acid structure with alkyl ester substituent groups. The alkyl groups are saturated hydrocarbon chains that vary in length and extent of branching. Reproductive effector in rats.

CALCIUM CARBONATE, MOLYBDENUM DISULFIDE

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Acute Toxicity	-	Carcinogenicity	-
Skin irritation/corrosion	-	Reproductivity	-
Serious eye damage/irritation	-	STOT – Single exposure	-
Respiratory/skin sensitisation	-	STOT – Repeated exposure	-
Mutagenicity	-	Aspiration hazard	-

CMR STATUS Not applicable

SECTION 12 - ECOLOGICAL INFORMATION

Toxicity DO NOT discharge into sewer or waterways

Persistence and biodegradability

Ingredient	Persistence: water/soil	Persistence: Air
Not available	Not available	Not available

Bioaccumulative potential

Ingredient	Bioaccumulation
Not available	Not available

Mobility in Soil

Ingredient	mobility
Not available	Not available

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal

Recycle wherever possible or consult manufacturer for recycling options.
Consult State Land Waste Authority for disposal.
Bury or incinerate residue at an approved site.
Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 - TRANSPORT INFORMATION

Labels Required
Marine Pollutant NO
HAZCHEM Not Applicable
Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

SECTION 15 - REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture
naphthenic distillate, heavy, solvent-refined (severe) (64741-96-4.) is found on the following regulatory lists
"OECD List of High Production Volume (HPV) Chemicals","Australia Inventory of Chemical Substances (AICS)","International Chemical Secretariat (ChemSec) SIN List (*Substitute It Now!)","Australia Hazardous Substances Information System - Consolidated Lists"

Residual oils, petroleum, solvent dewaxed(64742-62-7.) is found on the following regulatory lists
"Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","International Chemical Secretariat (ChemSec) SIN List (*Substitute It Now!)","Australia High Volume Industrial Chemical List (HVICL)","Australia Hazardous Substances Information System - Consolidated Lists"

Calcium carbonate(471-34-1) is found on the following regulatory lists
"International Council of Chemical Associations (ICCA) - High Production Volume List","Australia Exposure Standards","FisherTransport Information","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","Australia Drinking Water Guideline Values For Physical and Chemical Characteristics","International Numbering System for Food Additives","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP","Australia Therapeutic Goods Administration (TGA) Substances that may be used as active ingredients in Listed medicines","IMO IBC Code Chapter 17: Summary of minimum requirements","Acros Transport Information"

Molybdenum disulfide(1317-33-5) is found on the following regulatory lists
"International Maritime Dangerous Goods Requirements (IMDG Code)","Australia Exposure Standards","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","FisherTransport Information","United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)","Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","Australia National Environment Protection (Ambient Air Quality) Measure - Schedule 1: Pollutants","International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs","OSPAR National List of Candidates for Substitution – Norway","Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)","Australia National Environment Protection (Ambient Air Quality) Measure - Schedule 2 Table 1: Standards and Goal for Pollutants other than Particles as PM2.5","UNECE - Kiev Protocol on Pollutant Release and Transfer Registers - Annex II","Australia National Pollutant Inventory","Sigma-AldrichTransport Information","United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)","Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List","Australia Hazardous Substances Information System - Consolidated Lists","International Air Transport Association (IATA) Dangerous Goods Regulations","Australia - New South Wales Protection of the Environment Operations (Waste) Regulation 2005 - Characteristics of trackable wastes"

Zinc dialkyl dithiophosphate(68649-42-3) is found on the following regulatory lists
"International Maritime Dangerous Goods Requirements (IMDG Code)","International Council of Chemical Associations (ICCA) - High Production Volume List","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)","Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)","UNECE - Kiev Protocol on Pollutant Release and Transfer Registers - Annex II","OSPAR National List of Candidates for Substitution – United Kingdom","Australia National Pollutant Inventory","United Nations Recommendations on the transport of Dangerous Goods Model Regulations (Spanish)","Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List","International Air Transport Association (IATA) Dangerous Goods Regulations","Australia - New South Wales Protection of the Environment Operations (Waste) Regulation 2005 - Characteristics of trackable wastes"

DISCLAIMER

The information contained within this MSDS applies only to the Chemtools product to which the sheet relates.

The information provided is based on our best knowledge at the time of issue.

The information contained within this MSDS is believed to be accurate and is given in good faith. However, no warranty is made, either expressed or implied, regarding its accuracy or any liability arising out of the use of the information herein or the product supplied.

When used in other preparations, formulations, or in mixtures, it is necessary to ascertain whether the classifications of the hazards have changed. The attention of the user is drawn to the possibility of creating other hazards when the product is used for purposes other than that for which it was recommended. In such cases, a reassessment may be necessary and should be made by the user.

This safety data sheet should only be used and reproduced in order that the necessary measures are taken relating to the protection of health and safety at work.

It is the responsibility of the handlers to pass on the totality of the information contained within this document to any subsequent person(s) who will come in to contact with, handle or use this product in any way.

They should check the adequacy of the information provided within this MSDS before passing it on to their customers/staff.