Section 1: Identification

Common Name/Trade Name	AZATHIOPRINE USP	
Supplier Information	Letco Medical, LLC 1316 Commerce Drive NW Decatur, AL 35601 1 (800) 239-5288 +1 (734) 843-4693	**IN CASE OF EMERGENCY:** Chemtrec 1 (800) 424-9300 **(24 hours)** NSW Poisons Information Centre: 131 126 (24 hours)
Distributor Name	Bella Corp Trading Pty Ltd 6/34 Dominions Road, Ashmore QLD 4214, Australia Telephone: 07 5597 4169 Email: bellacorp@bellacorp.com.au	
Product Synonym(s)	C9-H7-N7-O2-S; methylnitroimidazolylmercaptopurine; 6-(1'-methyl-4'-nitro-5'-imidazolyl)mercaptopurine; 6-(methyl-p-nitro-5-imidazolyl)thiopurine; 6-[(1-methyl-4-nitro-1H-5-yl)thio]-1H-purine; 6-(1-methyl-4-nitroimidazol-5-yl)thiopurine; azathioprene; NCI-C03474; NSC-39084; Azumun Azanin Azatioprin Azothioprin Azothioprine BW 57-322; Ccucol Imuran Imurex Imurel Rorasul; antineoplastic/ immunosuppressant; Thioprine	
Relevant Use(s) of Product	Manufacture or Compounding of Substances	

Section 2: Hazards Identification

Classification of Substance or Mixture	Acute Toxicity (Oral) Category 4, Respiratory Sensitizer Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Acute Toxicity (Dermal) Category 4, Carcinogenicity Category 1A, Skin Sensitizer Category 1, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A	
Signal Word	Danger	
Hazard Statement(s)	H302 H312 H315 H317 H319 H332 H334 H335 H350	Harmful if swallowed Harmful in contact with skin Causes skin irritation May cause an allergic skin reaction Causes serious eye irritation Harmful if inhaled May cause allergy or asthma symptoms or breathing difficulties if inhaled May cause respiratory irritation May cause cancer
Pictogram(s)		
Precautionary Statement(s)	P201 P261 P271 P280 P304+P340 P308+P313 P321 P342+P311 P403+P233 P405 P501	Obtain special instructions before use. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. IF INHALED Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned Get medical advice/attention. Specific treatment (see advice on this label). If experiencing respiratory symptoms Call a POISON CENTER or doctor/physician. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container to an approved waste disposal plant.
Hazards Not Otherwise Classified	No data available	
Ingredient(s) with Unknown Toxicity	No data available	

Section 3: Composition/Information on Ingredients

Chemical Name	Azathioprine
Common Name	Azathioprine
CAS Number	446-86-6
Impurities and/or Stabilizing Additives	No data available

Section 4: First Aid Measures

General Advice	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If Inhaled	If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor, without delay.
In Case of Skin Contact	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.
In Case of Eye Contact	Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
If Swallowed	IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Centre or a doctor. Urgent hospital treatment is likely to be needed. In the meantime, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.
Most Important Symptoms and Effects	Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise: INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. NOTE: Wear a protective glove when inducing vomiting by mechanical means. Treat symptomatically. For employees potentially exposed to antineoplastic and/ or cytotoxic agents on a regular basis, a preplacement physical examination and history (noting risk factors) is recommended. Periodic follow-up examinations should also be undertaken and should be overseen by a physician familiar with the toxic effects of the substance and full details of the nature of work undertaken by the employee. Following administration of antineoplastics, control of nausea and vomiting may be attempted by giving phenothiazines such as perphenazine, prochlorperazine, promethazine or thiethylperazine. In bone-marrow depression, transfusion of blood or platelets reduces the risk of life-threatening haemorrhage. Granulocyte transfusions and injection of antibiotics may be necessary to combat infection in the neutropenic patient. Hyperuricaemia is avoided by the addition of allopurinol to treatment schedules and measures such as alkalisation of the urine and hydration may be adopted. MARTINDALE: The Extra Pharmacopoeia, 28th Edition.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Extinguishing media Foam. Dry chemical powder. BCF (where regulations permit). Carbon dioxide.
Special Hazards Arising From the Substance/Mixture	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
Special PPE and/or Precautions for Firefighters	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 courses. Use water delivered as a fine spray to control fire and cool adjacent area. Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions). Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion. Combustion products include: carbon monoxide (CO) carbon dioxide (CO_2) nitrogen oxides (NOx) sulfur oxides (SOx) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures	Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
Methods and Materials Used for Containment	Prevent, by all means available, spillage from entering drains or water courses.
Cleanup Procedures	Minor Spills Clean up waste regularly and abnormal spills immediately. Avoid breathing dust and contact with skin and eyes. Wear protective clothing, gloves, safety glasses and dust respirator. Use dry clean up procedures and avoid generating dust. It is recommended that areas handling final finished product have cytotoxic spill kits available. Spill kits should include: impermeable body covering, shoe covers, latex and utility latex gloves, goggles, approved respirator (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z 88 or national equivalent), see Section 8,disposable dust pan and scoop, absorbent towels, spill control pillows, disposable sponges, sharps container, disposable garbage bag and hazardous waste label Where spills are treated with loose absorbents, such as vermiculite, ensure dust exposure is strictly avoided. To avoid accidental exposure due to waste handling of cytotoxics: Place waste residue in a segregated sealed plastic container. Used syringes, needles and sharps should not be crushed, clipped, recapped, but placed directly into an approved sharps container. Dispose of any cleanup materials and waste residue according to all applicable laws and regulations e.g., secure chemical landfill disposal. All personnel likely to involved in a antineoplastic (cytotoxic) spill must receive practical training in: the correct procedures for handling cytotoxic drugs or waste in order to prevent and minimise the risk of spills the location of the spill kit in the area the arrangements for medical treatment of any affected personnel the procedure for containment of the spill, and decontamination of personnel and the environment, including the different procedures for major and minor spills the procedure for waste disposal according to the nature and extent of the spill. Major Spills: Clear area of personnel and move upwind. Wear full body protective clothing with breathing apparatus.

Section 7: Handling and Storage

Precautions for Safe Handling	Australian Standard (AS2639) and the National Institute of Health (USA) recommends that the preparation of injectable antineoplastic drugs should be performed in a Class II laminar flow biological safety cabinet and that personnel preparing drugs of this class should wear appropriate personal protective gear. Emphasise controls on containment. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions). Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. Establish good housekeeping practices. Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds. Other information: Antineoplastics (cytotoxics): should be clearly identifiable to all personnel involved in their handling should be stored in impervious break-resistant containers should be stored in separate, clearly marked storage areas to minimise the risk of breakage, and to limit contamination in the event of leakage. Spill kits should be available in storage areas. Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers.
Conditions for Safe Storage	Suitable container Glass container is suitable for laboratory quantities Polyethylene or polypropylene container. Check all containers are clearly labelled and free from leaks. Avoid reaction with oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Components with Workplace Control Parameters	Occupational Exposure Band Rating: E. Occupational Exposure Band Limit: </= 0.01 mg/m3. It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace. At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum. NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply. Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable.
Appropriate Engineering Controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
PPE - Eye/Face Protection	Chemical protective goggles with full seal. Shielded mask (gas-type). 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.
PPE - Skin Protection	Hands/feet protection: The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watchbands should be removed and destroyed. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Rubber gloves (nitrile or low-protein, powder-free latex, latex/ nitrile). Employees allergic to latex gloves should use nitrile gloves in preference. Double gloving should be considered. PVC gloves. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. polychloroprene. nitrile rubber. butyl rubber.
PPE - Body Protection	Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent]. Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. When handling antineoplastic materials, it is recommended that a disposable work-uniform (such as Tyvek or closed front surgical-type gown with knit cuffs) is worn. For quantities up to 500 grams a laboratory coat may be suitable. For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs. For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers.
PPE - Respiratory Protection	Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures. The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option). Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended. Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program. Use approved positive flow mask if significant quantities of dust become airborne. Try to avoid creating dust conditions.

Section 9: Physical and Chemical Properties

Appearance	Pale-yellow powder
Upper/Lower Flammability or Explosive Limits	Not Available
Odor	Odorless
Vapor Pressure	Negligible
Odor Threshold	Not Available
Vapor Density	Not Available
pH	Not Applicable
Relative Density	Not Available
Melting Point/Freezing Point	243-244°C
Solubility	In water: Immiscible. Soluble in dilute solutions of alkali hydroxides but decomposes in stronger solutions.
Initial Boiling Point and Boiling Range	Not Available
Flash Point	Not Available
Evaporation Rate	Not Available
Flammability (Solid, Gas)	Not Available
Partition Coefficient	Not Available
Auto-Ignition Temperature	Not Available
Decomposition Temperature	Not Available
Viscosity	Not Applicable

Section 10: Stability and Reactivity

Reactivity	See section 7.
Chemical Stability	Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerization will not occur.
Possibility of Hazardous Reactions	No data available
Conditions to Avoid	See section 7.
Incompatible Materials	See section 7.
Hazardous Decomposition Products	See section 5.

Section 11: Toxicological Information

Acute Toxicity - LD50 Oral	Oral (rat) LD50: 400 mg/kg[2] Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Antineoplastic action is dependent on cytotoxic action which is not selective for malignant cells alone but may affect all rapidly dividing cells. The spectrum of effects seen with these agents is therefore similar although differences do arise. Acute adverse effects commonly produced by these agents include anorexia, nausea and vomiting (of ten central in origin and occurring minutes or hours after administration), allergic reaction (skin rashes, pruritus, erythema, hypotension, malaise, and anaphylaxis) and local irritant effects. Hyperuricaemia and acute renal failure (due to uric acid nephropathy) may result from the lysis of large numbers of cells and breakdown of nucleoproteins. Side-effects with azathioprine include drug fever, liver damage and pancreatitis, myelosuppression, infection, bleeding, chills, nausea, vomiting and diarrhoea, headache, gastrointestinal disturbance and dermatitis. Joint and muscle pain are also common side effects.
Acute Toxicity - Inhalation	Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful. Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
Acute Toxicity - Dermal	Skin contact with the material may be harmful; systemic effects may result following absorption. Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material Entry into the bloodstream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Acute Toxicity - Eye	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.
Skin Corrosion/Irritation	See Acute Toxicity Dermal
Serious Eye Damage/Irritation	See Acute Toxicity Eye.
Respiratory or Skin Sensitization	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Practical evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a substantial number of individuals at a greater frequency than would be expected from the response of a normal population. Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases. Symptoms can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes and passive smoking. Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.
Germ Cell Mutagenicity	Data either not available or does not fill the criteria for classification.
Carcinogenicity IARC	This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS.
Carcinogenicity ACGIH	No data available.
Carcinogenicity NTP	No data available.
Carcinogenicity OSHA	No data available
Reproductive Toxicity	Data either not available or does not fill the criteria for classification
Specific Target Organ Toxicity - Single Exposure	Data available to make classification
Specific Target Organ Toxicity - Repeated Exposure	Data either not available or does not fill the criteria for classification
Aspiration Hazard	Data either not available or does not fill the criteria for classification

Section 12: Ecological Information

Toxicity	LC50 96 Fish 1661.459mg/L 3 EC50 96 Algae or other aquatic plants 85.891mg/L 3
Persistence and Degradability	HIGH
Bio-accumulative Potential	LOW (LogKOW = 0.1)
Mobility in Soil	LOW (KOC = 93.28)
Other Adverse Effects	No data available

Section 13: Disposal Considerations

Waste Treatment Methods Product	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: Reduction Reuse Recycling Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. DO NOT allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. Antineoplastic (cytotoxic) wastes must be packed directly, ready for incineration, into colour-coded, secure, labelled, leak-proof containers sufficiently robust to withstand handling without breaking, bursting or leaking. Containers of special design are available for particular needs (such as disposal of sharps) and should be used. Once filled and closed, such containers must never be re-opened. Immediate containers must bear a nationally accepted symbol or device depicting cytotoxic substances and be labelled with the words: CYTOTOXIC WASTE - INCINERATE in a style of lettering approved by the national/ state authority.
Waste Treatment Methods Packaging	See Waste Product.
Special Precautions Landfill or Incinerations	No data available
Other Information	No data available

Section 14: Transport Information

UN Number	Not dangerous goods
UN Proper Shipping Name	N/A
Transport Hazard Class(es)	N/A
Packaging Group	N/A
Environmental Hazards	N/A

Section 15: Regulatory Information

National Inventory Status Australia - AICS Yes Canada - DSL Yes Canada - NDSL No (azathioprine) China - IECSC No (azathioprine) Europe - EINEC / ELINCS / NLP Yes Japan - ENCS Yes Korea - KECI Yes New Zealand - NZIo C Yes Philippines - PICCS No (azathioprine) USA - TSCA No (azathioprine) Taiwan - TCSI Yes Mexico - INSQ Yes Vietnam - NCI No (azathioprine). Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

Section 16: Other Information

Additional Information	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. Allergic reactions which develop in the respiratory passages as bronchial asthma or rhinoconjunctivitis, are mostly the result of reactions of the allergen with specific antibodies of the IgE class and belong in their reaction rates to the manifestation of the immediate type. In addition to the allergen-specific potential for causing respiratory sensitisation, the amount of the allergen, the exposure period and the genetically determined disposition of the exposed person are likely to be decisive. Factors which increase the sensitivity of the mucosa may play a role in predisposing a person to allergy. They may be genetically determined or acquired, for example, during infections or exposure to irritant substances. Particular attention is drawn to so-called atopic diathesis which is characterised by an increased susceptibility to allergic rhinitis, allergic bronchial asthma and atopic eczema (neurodermatitis) which is associated with increased IgE synthesis. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.
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